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Present Status of Female Hormone Therapy*

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The daily mail brings an enormous volume of advertising concerning the various hormone preparations that have been developed for use in gynecological practice.

Detail men of all of the great commercial houses call upon us to call our attention to their particular brand of, or trade name for, the various hormones.

An enormous volume of legitimate literature on endocrinology has unfolded itself upon the pages of our medical magazines. Numerous monographs and texts have now appeared to aid the clinician in improving his knowledge of the more modern concepts of endocrinology and hormonology.

All of this has been brought about by the untiring and persistent efforts of a large and ever expanding group of scientific workers in the fields of biochemistry, physiology and comparative zoology. In fact, all of the basic or pure sciences have contributed their share of work and knowledge.

The sudden advent of these works has wrought such changes in the nomenclature and phraseology of the literature that it has tended to develop an inferiority complex among purely clinical men in the study of endocrine problems. And yet, it is the clinician or general practitioner to whom the patient must look for expected benefits from all of the laboratory and research developed therapy to which this literature refers.

To the busy practitioner—untrained in research and rusty on basic sciences—a difficulty arises in his ability to evaluate the many laboratory experimental works and to differentiate between the valuable, the valueless and the indifferent modes of therapy that are offered him.

Further, he finds many times that he is hampered in using new products offered because of lack of laboratory facilities, such as are a part of the endowed clinics, medical schools, and commercial laboratories. Or again, if the laboratory facilities are available, he may not feel justified in utilizing a procedure that is expensive and out of proportion to the benefits offered.

I feel that this has been a potent factor in causing a return on the part of the profession to empiricism and a haphazard use of most valuable additions to our armamentarium—additions in the form of definite potent hormones that have now had their value established beyond a shadow of doubt in definite clear-cut clinical syndromes.

The eagerness of drug houses to be the first to reach our offices with any new agent of therapy has often caused unfortunate optimism as to results expected. This has been especially true where a product has proven to give results in laboratory animal experimentation. Results that might, therefore, be expected to follow their administration in the human, but which unfortunately fail, or go awry in such application. However, the well-trained research or laboratory worker knows, full well, the numerous pitfalls in such reasoning. He knows that each animal has a different species response to a given hormone. This has caused much confusion in arriving at stated doses of the pure hormones and potent preparations due to various statements of dosage dependent upon assays in different species as in rats or mice. Thus, the estrogenic designated dosage in

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rat units by one group and mouse units by another.

Much of this confusion concerning estrogenic dosage has been checked by adoption of the International Unit, as established by the League of Nations Committee on Standards in London, 1932.

The International Unit, now the standard for estrogenic substances, is one gamma of pure crystalline estrone, or 1/10 millionth of a gram equivalent of one mouse unit. Thus, one mg. equals 10,000 International Units and .2 gm. equals 2,000 International Units.

The unit of the gonadotropic hormones has not as yet been so easily and definitely defined, since no one as yet has been able to produce a pure material in this field that could lend itself to measurement by volume or weight. It is in this group that biological assay by various methods must still be depended upon for unit of dosage. Practically all of these methods are dependent upon the evaluation of the various modifications of the Aschheim-Zondek test and the dosage expressed in Rat units (R.U.) each unit representing the minimal amount of extract required to induce ovarian changes in immature rats in a specified time. A biological assay may be modified by many factors, such as the number and time of injections, the nature of the solvent, and the age and weight of the rats. Due to this method of arriving at dosage, you have varying potency in the products of gonadotropic substances offered for clinical use. These products often tend to deteriorate and should be dated.

Products of pregnant mares serum offered on the market today under the name of Gonadin and Gonadogen must not be confused with former anterior pituitary extractives that are impotent.

Although these products are offered as potent follicle stimulating and corpus luteal maturing hormone factors, it is not definitely known whether they are produced in the pituitary or placenta. It is a serum extractive and has not as yet been synthesized. The dosage has been arbitrarily placed at 60 rat units to be administered either at one dose intravenously to produce ovulation in 24 to 48 hours or in staggered dosage of 10 to 20 units every 48 hours in developing a single follicle.

This latter dosage is also advised in stimulating spermatogenesis in the deficient male.

The hormone of the corpus luteum has now been isolated and purified so that a definite unit of dosage is attained. The committee of Standards of the League of Nations, in 1935, adopted an International Unit which they defined as the pregestational activity present in one milligram of crystalline corpus luteum hormone. There are three methods of assay: (1) The Corner Allen Rabbit Unit (2) The Clauberg Rabbit Unit and (3) The German Clinical Unit.

Of these, the Corner Allen Unit alone is nearly the equivalent of the International Unit, the others being far under the International Unit in potency. It is my personal opinion that we as clinicians would do well to demand a product measured by the International Unit as standard, now that potent and purified preparations have been offered us.

A number of pathological or physiological varients may be aided by the clinicians, even though the term cure may not be used in many instances.

As in any field of medicine, it is true here that an intelligent understanding of the normal physiological processes of the female organism is essential to an evaluation of physiological variations.

The term "physiological variations" is used advisedly as we now recognize that many abnormalities in gynecology and obstetrics are due to a rise or depression of hormone levels above or below recognized normal levels and yet can not be placed in the category of true pathology.

NORMAL INTERACTION OF PITUITARY-OVARY AND UTERUS

The pituitary gland secretes in its frontal lobe a number of hormones.

We will not enter into that research argumentative discussion as to whether there are 5 or 32 hormones of the anterior pituitary that have to do with all of the vital processes and glands of internal secretion of the body.

It is essential that we recognize several factors in connection with the anterior pituitary secretory and ovarian secretory mechanisms.

(1) In the anterior pituitary a gonadotropic stimulating or iniating hormone is secreted that is essential to follicle growth in the ovary. Without it the ovary will not develop graafian follicles and estrogenic substance.

(2) A corpus luteal gonadotropic factor is secreted in the anterior pituitary that causes continued graafian follicles development in the form of the corpus luteal body following ovulation.

(3) There is a balancing or, might I use the term, a neutralizing mechanism, between follicle hormone of the ovary on one side and the gonadotropic stimulating factor or factors on the other. As the anterior pituitary gonadotropic hormone rises in quantity in the body it stimulates follicle development with consequent increase in follicle hormone, but as the follicle hormone increases it de-

presses the anterior pituitary gonadotropic hormone which in turn causes a lowering of the stimulus to follicle development. Thus, pituitary gonadotropic functions may be depressed by unwise and unnecessarily large dosage.

(4) With the advent of pregnancy the placenta produces or stores a substance similar in action to the anterior pituitary corpus luteal gonadotropic substance which has been called anterior pituitary gonadotropic-like substance. This terminology is confusing as it leaves the erroneous impression often that it is a pituitary hormone. Thus, the recent ruling by the Committee of Standards of the League of Nations changes this more correctly to "Chorionic Gonadotropic Hormone," since it has its origin, apparently, in the chorionic cells of the placenta.

(5) The Mullerian Duct System (i.e.) the tubes, uterus and vagina, along with the secondary sex characteristics are stimulated to normal adult development by estrogenic substances secreted in the ovary after the ovary has been properly primed by gonadotropic hormone from the pituitary structure.

(6) The inter-relating functions of this three-way system, that is, the pituitary, ovary, Mullerian duct system are very definitely influenced by other outside factors that are metabolic and nervous in nature. This is mentioned only to remind ourselves that we cannot clinically arrive at diagnostic conclusions predicted solely on pituitary, ovarian or Mullerian duct endocrine abnormalities.

The nervous systems play their role very definitely even though complexly. An example of this is the amenorrhoea of the freshman female college student, or of the new bride so often noticed.

The thyroid gland is known to alter pituitary function materially. In fact, it has become a blessed ally in many clinical syndromes in gynecology.

THYROID HORMONES IN GYNECOLOGY

No consideration of practical female hormone therapy could be complete without paying our respects to the thyroid gland. Whereas, we stated that the pituitary furnished us the power that primes the gonads. By the same token we must admit that the thyroid is a valuable booster station for that power.

Waning or low pituitary function can be stimulated to normal function by the metabolic stimulating or activating powers of the thyroid.

Gonadal deficiency in hypothyroid states has repeatedly shown improvement and normal leveling with thyroid therapy alone. Thus, a basal metabolic rate should be run on nearly all patients showing gonadal deficiency and, if low, thyroid therapy should be used in conjunction with other indicated endocrine therapy.

We must remind ourselves that thyroid extract is the only really satisfactory dessicated glandular product available. It is interesting to note that better results are obtained with the crude dessicated gland than with the active principle thyroxin.

Curtis has shown in his masterful work on iodine metabolism that there are a number of factors active in normal thyroid function besides thyroxin.

We must keep our hypothyroid patients under active observation at from one to four weekly intervals if we are going to get proper results.

Individual dosage must be established according to the needs of the patient. This may vary from one-fourth grain to three grains daily. Individuals will show varying responses over a course of weeks, so that even after a maintenance dose has been established, we may find an occasional reason for raising or lowering the dosage level. This is most true in sterility cases and especially during their prenatal period when their own thyroid may show a normal physiological step up so that thyroid may or may not need to be continued.

We could spend a valuable period in reviewing the thyroid alone, since it, like the pituitary, is concerned with every syndrome in gynecology.

Again, I remind you, that detailed controversial discussion that now fills volumes in experimental endocrinology, has no place here if we hope to get down to the subject.

Mainly: What of practical value has been added to our armamentarium by the endocrinologists and their allied workers?

It is probably best to start with the pituitary, since, as Novak says: It is the dynamo that furnishes the stimulating power that is necessary for estrogenic activity.

The posterior pituitary with its valuable products—Pituitrin and its split products, Pitressin and Pitocin, are well-known and are eliminated from discussion here.

The anterior pituitary has been better understood through its study by numerous workers, who have definitely proven many of its varied functions. Many times these workers have seemed to be on the verge of producing pure products only to run into blind alleys of research.

Thus, no hormones of the anterior pituitary have been produced in pure form, though there are several indifferently potent commercial products offered.

TABLE I

Separate Anterior Pituitary Hormones Postulated

A—Gonadotropic Hormones
(1) Follicle Stimulating (Prolan-A)
(2) Luteinizing (Prolan-B)
(3) Interstitial Cell Stimulating
(4) Antagonist
(5) Synergist
(6) Activator
B—Thyrotropic Hormone
C—Adrenotropic Hormone
D—Lactogenic Hormone
E—Growth Hormone
F—Metabolic Hormone
(1) Diabetogenic
(2) Ketogenic
(3) Pancreatropic
(4) Glycotropic
(5) Gycostatic

A glance at Table I, as produced by Jensen and Folksdorf in the Journal of Endocrinology, September, 1939 issue, should be convincing evidence for the average practitioner that he should leave this field for the true full-time investigators and hope that they can give us a satisfactory clinical solution of this intricate subject in the near future.

Table II gives a few of the commercial preparations of the gonadotropic hormones.

Obviously, no medication or therapy should be advised except where definite indications present themselves for its use.

Inasmuch as the injudicious use of some of the endocrine products may cause undesired side reactions, we should be the more sure that they are definitely indicated when used.

Empiricism should now largely be superseded by definite indications for endocrine therapy.

It can safely be postulated that gonadotropic hormones can only give results in the presence of a stimulating ovary or testes. Thus, it would be foolish to expect any results from administration of anterior pituitary or chorionic gonadotropic hormone where the ovaries have been ablated by surgery or x-ray or in the congenital absence of functionable ovaries or testes, or after menopausal atrophy of the ovaries.

By the same reasoning, it follows, that substitution therapy in the form of ovarian and testicular hormones can be expected to give results in the absence of functionable glands where the organism is suffering from a deficiency syndrome.

As a matter of fact, it is in this field of substitution therapy of ovarian follicle hormone and testicular hormone that the clinicians have obtained their most brilliant results.

The field of stimulation therapy with potent anterior pituitary gonadotropic hormones still looks to the future. The clinician is still awaiting the arrival of potent and reasonably priced products. Among the products obtained by processing the anterior pituitary glands of the animals we may consider the following in Table II.

TABLE II

Gynantrin (G. D. Searle & Co.,) is an Anterior Pituitary Extractive standardized to 100 R. U. per cc.

Maturity Factor (Ayerst-McKenna & Harrison) is also an Anterior Pituitary Extract—100 R. U. per cc.

Prephysin (Chappel Brothers Inc.,) is an Anterior Pituitary Extract—25 R. U. to 1 cc.

Maturity Factor (Armour) Anterior Pituitary Extract—300 R. U. per cc.

These preparations are reported to give very indifferent results in stimulating or initiating follicle development in primary and secondary amenorrhoea, though they have been proven to give follicle response in laboratory animals.

Recently, interest has been centered on the use of extractives of mares serum which has been found to contain a very potent gonadotropic substance during the middle third of gestation.

These substances are shown to initiate ovulation in the laboratory animals, though Novak states that he could not get such results in the human.

Preparations on the market are found in Table III.

TABLE III

Gonadin (Cutter Laboratories) 1 cc. contains 200 units and is to be given 100 to 200 units every second day—furnished in 600 unit packages. Gonadogen (Upjohn Laboratories) 10 & 20 unit tablets supplied to be dissolved in sterile water for administration.

These preparations are expensive and are as yet in the experimental or questionable stage. They require a skin test for protein sensitivity before using, since they contain foreign proteins.

Gonadin has been shown to give definite stimulation with increase in development of spermatozoa in sterility cases with azoospermia and aspermia. Not enough experience is yet available to determine whether this will overcome the sterility or not in these cases, though the work of Cole sounds convincing.

In my hands where the use of gonadogen has been limited to a few cases of hypospermia and sterility with irregular ovulatory history, I have not been so fortunate in results. Two cases of hypospermia have shown an increase in sperm count after administration of gonadogen, but fertility has not as yet been established.

In five cases of female sterility with irregular menses, we have been able to bring on ovulation as indicated by prompt appearance of menses in 14 to 16 days following the in-

travenous injection, but pregnancy did not ensue.

We are still giving it a trial by varying the time element and dosage level in these cases and will continue to give it a clinical trial in future cases.

Chorionic gonadotropic hormone has been a most satisfactory addition to the armamentarium of the gynecologist. It does not stimulate follicle growth. Neither is it now thought to produce corpus luteal development as was once taught. Instead, it probably induces atretic processes in undeveloped follicles of the human ovaries. This would account for its great value in the treatment of metropathia hemorrhagica, or functional uterine hemorrhage accompanying endometrial hyperplasia in the absence of ovulation and corpus luteal formation.

This is the swiss cheese type of hyperplasia on which Dr. John Burch did original work. Though all such cases do not respond equally well to this therapy, yet good results are obtained in a large percentage.

Chorionic gonadotropic hormone is very satisfactorily used in cryptorchidism. Several potent chorionic gonadotropic hormone prepartions are on the market, all obtained from pregnancy urine except one (A.P.L.)

Commercial Preparations are listed in Table IV.

TABLE IV

Korotrin (formerly Antophysin) Winthrop supplied in powder in vacuum packed ampules and vials: Ampules contained 100 to 500 R. U. also in vials of 1000 R. U. and 5000 R. U.

Antuitrin-S (Parke Davis & Co.,) supplied in 10 cc. and 50 cc. vials of 100 R. U. to cc. and 500 R. U. to cc. in 10 cc. vials.

A. P. L. (Ayerst-McKenna & Harrison) an extract of Human Placenta, according to technique of Collip. Supplied in 10 cc. vials of 100, 500 and 1000 R. U. per cc.

Follutein (Squibb) supplied in a glycerine solution to be diluted with sterile distilled water in three sizes—500, 1000 and 5000 units.

In administering chorionic gonadotropic hormone it is well to remember that the dosage must be adapted to each individual. Where 100 R. U. every second day may give a response in one patient, another may require that the dosage be stepped up materially to as much as 1000 R. U. to the dose. This has been proven beyond doubt in undescended testes that responded to larger dosage after failing on the smaller dosage.

ESTROGENIC HORMONES

Theelin or Estione C 18 H 24 O 2 or Hydroxy 17—Keto 1, 3, 5, Estratriene.

Theelol or Estriol C 18 H 24 O 3 or 3, 16, 17 Trihydroxy 1, 3, 5, Estratriene.

Emmenin is one of these.

Progynon-B.

Dihydrotheelin or Estradiol 3, 17 Dihydroxy, 1, 3, 5 Estratriene.

Equilene and Equilenin, these are as yet unimportant. All are sterols and related to the bile acids, particularly Cholesterol.

Through the work of Butenandt and Dodds, 1936 synthesis of the estrones began.

In 1938 Dodds, Goldberg, Lawson and Robinson synthesized a sterol group 4:4-dihyproxy-A: B-diethyl stilbene or diethylstilboesterol. This is better known to us as stilbesterol and is two and one-half times as potent as estrone when given by mouth. They can be manufactured cheaply and bid fair to revolutionize the use of estrone therapy.

Estrogenic hormones, these therapeutic agents, have taken their place, along with other eminently satisfactory specific hormones, such as pituitrin, suprarenin, insulin and thyroxin. Correctly used for proper indications, they have proven must valuable in several fields that were formerly most unsatisfactorily managed.

The most widespread use is found in relieving the vasomoter symptoms incident to the onset of menopause and other deficient estrogenic states.

In senile vaginitis it has been found to be a valuable agent. One must be warned that here, rather large doses are indicated, often to initiate a quick response.

In this connection atrophic rhinitis has been found to respond, miraculously, to estrogens.

Prolonged use of estrogens will develop the secondary sex characteristics in those patients who show primary developmental stigmata that can be traced to deficient anterior pituitary growth hormone or deficient ovaries. This is an interesting field within itself on which we could spend a full evening.

Small breasts respond to estrogens applied locally, but atrophy ensues when the therapy is discontinued.

Gonorrhoeal vulvo-vaginitis of infants and children responds to intramuscular injections, or daily suppositories of estrogens. The results, here, are obtained because of the ability of the estrogens to cornify the cuboidal epithelium of the infant's vagina and vulva, to an adult or squamous state of development on which the gonococci will not live. In children approaching the menarche, the uterus may be brought into a state of an ovulatory menses by large continued dosage, but on stopping the estrogens it will regress without harm.

Periodic premenstrual mastalgia responds very favorably to premenstrual dosage of estrogens. This is probably brought about by the action of the estrogenic hormone in developing the duct system. It is to be remembered that the glandular or acini system of the breast is developed and congested just premenstrual and prenatal through the effects of the corpus luteal hormones.

Clinically, estrogens have been recommended for a large number of conditions, some of which are oligomenorrhoea, migraine headaches, vomiting of pregnancy, toxemias of pregnancy, induction of labor, acne, hirsutism, frigidity, climacteric hypertension, etc. In this group, it might suffice to say that very indifferent results have been reported.

Fluman suggests in his monograph that many spontaneous recoveries may be accredited to the therapy, and that favorable influence often can be attributed to a psychotherapeutic effect.

We should be warned, therefore, not to get over-enthusiastic in our use of the estrogens and to limit their use to the recognized fields of usefulness.

Do not confuse migraine headache as mentioned here with the definite premenstrual headache that apparently does come from pituitary congestion. This type of headache is relieved by properly timed doses of estrogen.

CARCINOGENIC ACTIVITY OF ESTROGENS

Much has been said in recent discussions about the carcinogenic activity of estrogens. This has naturally followed experimental work in laboratory animals in which large doses of estrogens were administered over a long period of time.

Attention is called to the fact that certain coal tar derivatives containing the phenathrene nucleus as do the sex sterols; were known to be capable of producing carcinoma in experimental animals.

Cook & Doods; Lacassagne; Overholser & Allen and many others have done experimental work in this field.

Do not be frightened too much, however, by such discussions.

Remember that dosages used in producing carcinoma in experimental rats, mice and other laboratory animals were very large in comparison to the maximum dosages in woman. Also, Edgar Allen has observed that, "It must be made clear that the ovarian hormones are obviously not the only cause of female genital cancer, that estrogens normally are very important growth stimulators of female genital tissues and acting in high concentration, continuously, may produce atypical growth and are a determining factor in mammary and uterine cancer."

I, personally, have no fear of development of cancer in my menopausal or senile vulvitis cases, because we do not keep up large dosages over prolonged periods.

Many clinicians have no hesitancy in using estrogens for relief of post-radiation menopausal nervous symptoms in their pelvic and mammary cancer cases. I follow a rule never to administer estrogens in these cases as I desire to avoid any possibility of stimulating growth in a tissue that we are using every other means to destroy.

It is this thought of carcinogenic activity of stilbesterol that has kept it from recognition and sale to date. When we recognize that it has a two and one-half times greater potency than estrone and cut the dosage accordingly, then I believe it can be used with the same degree of safety as other animal glandular produced sterols.

Among the commercial prepartions of estrogenic hormones offered for intramuscular use are found in Table V.

TABLE V

Amniotin (Squibb) contains estrone from pregnant mares urine—supplied in ampules of 2000, 10,000 and 20,000 I. U. in oil.

Estrogenic Substance (Reed and Carnrick) from prenatal urine—supplied in ampules of 2,000 to 60,000 I. U. per cc. in oil.

Estrone (Abbott) from pregnant mares urine—supplied in ampules of 1000, 2000, 10,000 I. U. in oil.

Estrone (Eli Lilly) same as (Abbott).

Progynon-B (Schering Corp.) A benzoic acid estrone of estradial—prepared from pregnancy urine—supplied in ampules of 2500, 5000, 10,000, 50,000 I. U. in sesame oil.

Theelin (Parke Davis & Co.) is estrone from pregnancy urine—supplied in ampules 1000, 2000, 10,000 I. U. in oil.

Estrogenic Substances for Oral Use Are:

TABLE VI

Amniotin (Squibb) capsules containing 1000, 2000 I. U.

Emmenin (Ayerst McKenna & Harrison) as Estriol monoglucuronide from Human Placentae—Supplied as a liquid with a potency of 30 units per cc. and tablets of 120 (dayoral) units—½ to 2 drams daily doses.

Estriol (Abbott) from Pregnancy Urine Human—Supplied in capsules .06 mg. and .12 mg.

Estriol (Eli Lilly Co.) from Human Pregnancy Urine—Supplied in pluvules Estriol .06 mg. and .12 mg.

Progynon-DH (Schering Corp.) Estridol from Human Pregnancy Urine—Supplied in .75, .30, .90 mg. tablets.

Theelol (Parke Davis & Co.) from Human Pregnancy Urine—Supplied in sealed gelatin capsules .06 mg. and .12 mg.

Local suppositories are:—

TABLE VII

Amniotin Pessaries (Squibb)—Supplied in 1000 and 2000 I. U. sizes.

Estrone Suppositories (Eli Lilly Co.)—Supplied in 2000 I. U.

Progynon-DH Suppositories (Schering Corp.) —Supplied .0375 mg. — .375 mg. and for children .0375 mg.

Theelin Suppositories (Parke Davis & Co.)—Supplied in 2000 I. U. each.

Corpus Luteal Hormone has only recently been presented in pure crystalline form known officially as Progesterone.

Impotent Corpus Luteal Extracts have been on the market for several years.

Insufficient proven clinical data to date makes it very difficult to evaluate this, the newest addition to the Endocrine specific family.

It is optimistically advocated for use in chronic early abortion cases, but admittedly the dose must be large if results are expected, dosage up to 10 or 20 Rabbit units daily have been used with satisfactory results in my hands in threatened abortion cases within the past year.

Progesterone, also has been successfully used in bleeding fro mhypoplastic Endometrial tissue. It's use here is predicated upon anovulatory Endometrial bleeding in the absence of Corpus Lutum.

It's use in dysmenorrhoea has had indifferent results reported.

Among commercial preparations offered are found in Table VIII:—

TABLE VIII

Lipo Lutin (Parke Davis & Co.) Extracted from corpus lutea of swine—supplied in 1 cc. ampules of 1 and 2 Rabbit Units in oil.

Progestin (Eli Lilly & Co.) Alcoholic extract of corpora lutea in oil—supplied in ampules of 1 I. U.

Progestin (Upjohn) Extracted from fresh glands—supplied in 1 cc. ampules of 1 and 5 Corner Allen Units.

Proluton (Schering Corp.) from soy beans — supplied in 1 cc. ampules 1/5 I. U. 1. mg.—1 I. U. 2. mg. I. U. and 5. mg. I. U.

It is not surprising that a majority of this group should show a rather intense interest in the recent developments in the field of the male hormones.

As in the estrogenic deficiency syndromes in women, the deficiency of the testicular hormone, testosterone, in men may follow anterior pituitary gonadotropic failure or testicular deficiency.

Testosterone is a relatively new addition to the specific Endocrine family and though it has earned a definite permanent place in our armamentarium, I think we can truthfully say that it still is in an unsettled clinical state.

Much is being claimed for it in the enthusiasm of clinical trial.

As in the case of the estrogens, testosterone finds its greatest field of usefulness in substitution therapy, in impotence, due to ablation of the testes by injury, surgery, x-ray or in hypogonadism, due to congenital deficiency of either the anterior pituitary gonadotropic hormone or deficient testes.

Secondary sex characteristics of the male respond extremely well to testosterone in 25 to 50 mg. doses every second or third day.

Testosterone is being used very successfully in eunuchoidism to develop the secondary sex characteristics. Development of the penis, scrotum and pubic hair are rather quickly attained by proper timing of the dosage in young individuals.

Much has been said, but little actually known about the male climacteric and testosterone.

It might be suspected that the term male climacteric is often loosely used (correctly or incorrectly) to designate middle life impotence.

Again we are cautioned that testosterone is a potent hormone of the androgen group, that apparently corresponds in the male, to the estrone in the female. It has a depressing effect upon the anterior pituitary gonadotropic hormones. Thus, large doses may be deleterious in the end, rather than beneficially stimulating.

Testosterone has been used successfully in endometrial hyperplasia, with uterine hemorrhage. Here it probably acts as powerful androgen that depresses the anterior pituitary gonadotropic hormone secretion with resultant depression of ovarian follicular stimulation and secretion of estrogens that are continuously stimulating the endometrium.

Already, unwanted side reactions have been reported from its use in this field. Husky voices and hirsutism have been stimulated in some of these cases from prolonged large dosage.

The average dosage is 200 to 500 mg. given in divided dosage over a period of one month.

We have refrained from mentioning many things that could take up a whole evening such as dysmenorrhoea, pituitary syndromes, primary and secondary amenorrhoea, growth and lactogenic hormones, etc.

We have only hoped to mention a few rather definite clinical uses for these new though potent and efficient therapeutic agents, so that we can separate these definite syndromes and uses from that larger, more varied group in which varied and indifferent results can only be expected.

Endocrinology and hormonology is not for specialism.

In modest respects it should be a part of every clinician's armamentarium. But I do make a plea that we use it intelligently, carefully and respectfully.

The Indications, Results and Reasons for Use of the Different Types of Skin Grafts*

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Any subject which deals with skin grafting is usually of interest to every practitioner of medicine, as well as to the specialist in the field of plastic and reconstructive surgery. The indications for and the applicability of the various types of skin grafts are so universal that a working knowledge of their use may be regarded as indispensable. Once the underlying principles involved in the transplantation of skin are understood, the actual operative technique can readily be mastered. In many instances no special equipment is necessary other than that available in a well organized general hospital. It thus becomes the duty of every practitioner to familiarize himself with the indications, use and possibility of results in this field of endeavor. In the discussion to follow the multiplicity of uses and the results obtained from the use of the various types of skin grafts will be presented.

The material for study and the illustrations used to demonstrate the various conditions in which skin grafting is indicated are taken from the files of our clinic** and comprises a study of several hundred cases operated during the past ten years.

Types of Skin Grafts: There are six types of skin grafts which may be considered to be in general use at the present time. They are:

1. Pinch graft.
2. Seed graft.
3. Oliver-Thiersch graft.
4. Split thickness graft.
5. Full thickness graft.
6. Pedicle flap graft.

The pinch graft, as usually employed, is a small bit of tissue including the epidermis and a portion of the dermis. The primary contraction in this type of graft is not great and the secondary contraction of the graft itself is negligible. However, the contracture of the scar tissue epithelium which bridges the gap between each island of transplanted skin is extremely great and is at times deforming, particularly when it overlies a joint. The use of this type of graft for any purpose whatsoever is fast, and correctly so, falling into disrepute. The donor area (Fig. 1) is, as every one well knows, quite unsightly and the end result of the grafted area is no better and may even be worse. The functional and cosmetic result which is attained by the use of the pinch graft is in no way comparable to the results obtained by using the other types of grafts. The high percentage of "takes" of a pinch graft is truly its only redeeming feature. The authors strongly believe that the pinch graft does not have and should not have any place in the treatment of lesions requiring skin grafting.

The seed graft is in reality a small pinch graft but deserves a separate classification because of its manner of use. It is used particularly in granulating areas around the rectum which cannot be sufficiently prepared for grafting. In these cases, if a seed graft is implanted into the depth of the granulation tissue it will often be surprising how they will grow and epithelize to such an extent as to produce a quite satisfactory final result.

The Oliver-Thiersch graft is a type of graft which supposedly is cut through the papillary layer of the epidermis and is therefore a very thin graft. Anyone who has cut skin grafts, made cross sections of these grafts and studied them microscopically, readily realizes that it is a practical impossibility to cut a graft of such thinness. (Fig. 2) The thinnest graft of any worthwhile size possible to cut will always contain a varying amount of the dermis. Because of the fact that an Oliver-Thiersch graft is in reality a thin split thickness graft, its characteristics will be considered under that heading.

The split thickness graft is cut with a large razor-edged knife. It is of such a thickness that it splits the dermis at varying depths, dependent on the desire and ability of the operator. (Fig. 3) On the thickness

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of this type of graft will depend its degree of contractibility; i.e., the thicker the graft the more elastic fibers it will contain and thus the more primary shrinkage. However, the thinner the graft, the more will be the all-important secondary contractility. The average split graft may be considered to have a secondary contractility of less than 15 per cent. The main advantages in the use of a split graft are that a large defect may be covered at one operation. As much as 300 sq. inches of skin has been successfully grafted at one procedure using this type of graft. The cosmetic results are usually quite satisfactory and the functional results are excellent. With cognizance of a few exceptions, the split graft may be said to be the skin graft of universal applicability. The thicker the graft is cut the more normal in final appearance will the grafted area become. Another fact worthy of note is that if this graft is properly used the percentage of "takes" should be well over 90 per cent. With the exception of the pinch graft, it is the only type of graft which can be relied upon in the covering of a granulating wound. A great advantage in the use of the split graft is that the donor area readily heals spontaneously and that as many as four "crops" of skin may be cut from the same donor site. Except where there is deep loss of soft tissue, or exposure of bone, joints or tendons, the split graft is the graft of choice.

The full thickness graft is, as the name implies, cut so as to include all the layers of the skin. (Fig. 4) This graft is difficult to use successfully because of its relative uncertainty of "take." It is almost impossible to transplant this type of graft to a granulating area. A full thickness graft usually may be considered to have a primary contractile characteristic of about 40 per cent and practically little or no secondary contractility. The most important consideration in the use of this type of graft is found in the fact that the successful end result most nearly resembles the replaced skin as regards cosmetic appearance. This is of paramount importance in the repair of certain facial defects. Because of the thickness of this graft it will withstand trauma relatively well; thus, its not infrequent use for grafting hands and weight bearing areas is quite justifiable. A rather important disadvantage in the use of the full thickness graft is found in the fact that the donor site requires special surgical treatment in order to insure primary healing and because of the limitations of this, the amount of full thickness skin which may be removed from any given area is relatively small.

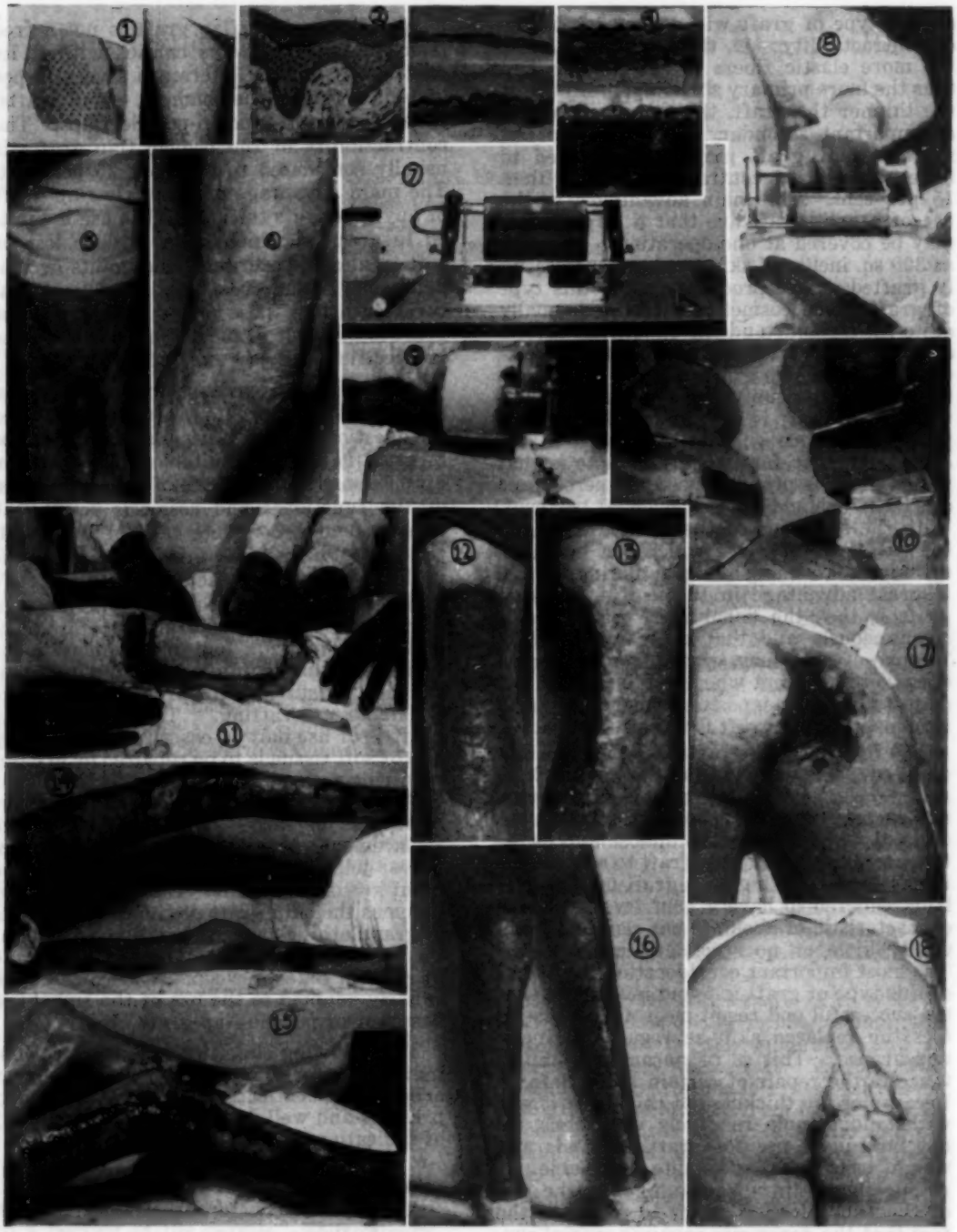
The pedicle flap graft is in truth a full thickness graft plus a layer of attached adipose tissue; thus, it really is a skin-fat transplant. The pedicle flap graft is not a free transplant as it always carries with it its own blood supply. There are several types of pedicle flap grafts; namely, island grafts, tubed flaps, uni- and bi-pedicle flaps. The contractibility of the pedicle flap grafts is usually considered to be about 25 per cent. The main advantage of a pedicle flap graft of any type is its thickness. Its use is limited to areas in which there is deep loss of soft tissues, exposure of bone, joints or tendons, and in the reconstruction of body features such as a nose or ear. This type of graft is difficult of management but its use in specific cases is quite indispensable.

Assuming that we have for consideration a patient for whom skin grafting is indicated the question naturally arises as to which type of graft is the most suitable. The selection must be made on the basis of a consideration of the functional and cosmetic result, the likelihood of a complete take of the graft, the ability of the individual surgeon and the various economical factors involved. We may consider the pinch graft only to condemn its use. The seed graft as before mentioned has in truth only one indication for its use and that is in a granulating area that can not be sufficiently prepared for more satisfactory grafting. The pedicle flap graft is of use only in cases in which a deep loss of soft tissue is to be repaired or in cases requiring restoration of a body feature. The full thickness graft is to be employed in certain cases of facial defects requiring skin replacement and in those cases in which tendon or joints are exposed without associated great loss of soft tissue. The split graft thus becomes the skin graft of choice in all cases of granulating wounds, operative defects due to opening up of old scar contractures and in all skin defects except in those cases peculiarly adapted to the use of the full thickness and/or pedicle flap graft.

The following classification of the various indications for skin grafting is entirely an arbitrary classification; however, it briefly presents and well demonstrates the diversity of indications for the use of a skin graft.

INDICATIONS FOR SKIN GRAFTING

I. Replacement for acute skin loss by:
   1. Burns
   2. Accidental trauma
      a. Skin loss only
      b. Associated loss of soft tissue with or without exposure of bone, joints or tendons.
   3. Post operative skin defects.
   4. Acute necrotizing infections.



1. (After Brown) Shows the unsightliness of both the donor and the recipient area when a pinch graft is used. 2. (After Maximow) Cross section of skin; the area between the arrows is the depth at which a true Oliver-Thiersch graft theoretically would be cut. 3. (After Padgett) Photomicrograph of a thin (upper) and a medium thick (lower) split thickness graft. Note that even in the thin graft the cut is considerably deeper than the papillary layer. 4. (After Padgett) Photomicrographs of a moderately thick (upper) split graft and a nearly full thickness (lower) skin graft. 5. Old ulcer on popliteal space of 17 years duration, the result of a burn in childhood. 6. Lateral view of same patient as in Fig. 5 to show the slight flexion deformity. 7. Photograph of the Padgett calibrated dermatome with the equipment necessary for its use. (The reader is referred to Padgett's original article for the details of technique in the use of this instrument.) 8. The drum has been placed on the previously prepared abdomen and cutting of the graft of .0018 inch thickness has begun. 9. The completion of the cutting of the graft from the abdomen. 10. Shows the graft after having been removed from the drum. 11. Graft sutured in place. (Mattress sutures throughout the graft are yet to be placed). 12. Posterior view to show the result one month after grafting. 13. Lateral view of result one month after grafting. 14 & 15. Granulating area, the result of a fire burn one month previous. 16. Final result six months later, 2200cm. of skin were grafted in four operations. 17. Traumatic avulsion of a portion of the skin and soft tissue of the buttocks. 18. The wound was allowed to granulate in and a split graft applied. Functional result is excellent.

19. Traumatic avulsion of a portion of the skin, soft tissue and bone, the result of an auto accident. Chest flap may be seen outlined. 20. Chest flap is in place and remainder returned to its bed. 21. Final result—Patient refused to have a trimming operation performed stating that he was well satisfied with the present result. 22. Granulating area of face the result of loss of skin following an auto accident. 23. Split grafts to cover the granulating base and later full thickness grafts were used in order to obtain the final end result. 24. Shows a case in which a forehead flap has been used in restoration of a complete nose. The defect produced by the forehead flap was grafted with a split graft. 25. Granulating area, the result of an acute fulminating necrotizing infection, following the administration of an unsterile hypodermic. (Case from the records of Barnes Hospital, St. Louis, Mo.) 26 & 27. Result obtained using the split graft. This was necessary before any orthopedic procedure could be considered. (Case taken from the records of the Plastic Service of Barnes Hospital, St. Louis, Mo.) 28. Disfiguring hairy mole on face. 29. Result obtained using a split graft. Photograph taken on 10th P. O. day. 30. Long standing contracture of wrist and fingers. 31. Release of contracture at wrist in one operation using the split graft. A secondary operation will be necessary to restore function in the fingers. 32. Bad flexion deformity of the knee (old burn). 33. Restoration of complete function of the knee using the split graft. 34. Chronic leg ulcer of two year duration. 35. Complete healing upon resort to skin grafting. 36. Post radiation ulceration of long standing. 37. Healing of the ulcer by skin grafting. 38. Traumatic nasal deformity in which there was deficiency of nasal lining. 39. End result of repair in which split grafts to inner nostrils was a major necessity for a successful result.

II. In the cosmetic repair of blemishes such as:
   1. Oil or "tattoo" marks.
   2. Birth marks, e. g., moles and port wine stains.

III. Replacement of skin deficiency following the operative release of old contractures.

IV. In the surgical treatment of chronic leg ulcers.

V. In the surgical treatment of post radiation burns.

VI. Replacement for deficiency or loss of mucus membrane.

VII. Restoration of an organ such as the ear or nose.

Since the split graft is the graft most commonly employed, a word or two concerning the details of technique of its use are in order. For the past several months we have been using the Padgett calibrated dermatome as the instrument of choice for the excision of the split thickness skin graft. Figures 5 to 13 with their accompanying legends show a recent case in which this instrument was employed. The main advantages of this instrument are mainly two; one, a graft of predetermined uniform thickness may be obtained with certainty, and two, grafts of a worthwhile size may be cut from otherwise unaccessible areas such as the skin of the abdomen or over the ribs. The disadvantages are that it is a mechanical "gadget" and as such is not fool-proof; thus, if it is used by the inexperienced it may lead to disappointment and disaster. In our hands we have found it difficult to cut a thin split graft with this instrument and therefore, where such a graft has been desired, we have resorted to the familiar Blair skin graft equipment.

The indications for the use of and the results obtained in the use of skin grafts as exemplified in the following case history summaries well demonstrates the importance of a working knowledge of this subject.

Perhaps the use of the skin graft as replacement for acute skin loss by whatever cause, is its most important use; certainly it is the most important as regards its usefulness in conservation of life. No one now denies that the use of the skin graft in a badly burned patient has meant not only a saving of life, but has also made possible a great economic saving in that it rehabilitates the patient in the shortest period of time with the best functional results. The preservation of life as well as the early restoration of function is best accomplished by the early use of skin grafting.

Case I (Fig. 14, 15, and 16). An 18-year-old male sustained third degree fire burns of both lower extremities. In four operations 2200 sq. cm. of skin was transplanted using the split-thickness graft as the graft of choice. In less than eight months from the date of this accident this boy is now completely healed, has no foot drop or flexion contractures and is up and about without the aid of a crutch or cane.

In the patient with skin loss due to accidental trauma the immediate use or, in some cases, the delayed use of skin grafting is quite important and almost a necessity in the successful management of these individuals. The choice, as regards the type of skin graft indicated, is dependent almost entirely on the amount of associated soft tissue loss.

Case II (Fig. 17 and 18). This 22-year-old common laborer was caught in the spokes of a cog wheel with resulting avulsion of the skin and part of the soft tissue of the buttocks. Immediate debridement followed by primary suture was attempted elsewhere in another state, but when we saw the patient three months later, there still was no attempt at healing except for some dirty infected granulation tissue in the depth of the wound. The first step in the treatment of this individual was to release the sutures, open up the wound and allow it to granulate in from the base. When this was accomplished a split graft was successfully applied. The functional result in this case is highly satisfactory and his compensation disability rating is less than five per cent.

Case III (Fig. 19, 29, and 21). This man had a loss of the skin, soft tissues and a portion of bone in the region of the chin. In order to heal this wound satisfactorily and at the same time restore approximately normal contour, a pedicle flap graft was used. This man was advised to return for a minor operative procedure so as to further improve the cosmetic appearance but he declined, stating that he was well-satisfied with the result.

Case IV (Fig. 22 and 23). This patient received a wound involving the face and scalp in which there was considerable loss of skin and subcutaneous tissue. Split grafts were used to cover over the granulating area and later full thickness grafts were substituted so as to obtain the final cosmetic appearance.

Skin defects produced by operation, for example, the defect following a radical breast operation, or the defect remaining from the use of a pedicle flap graft, can be very satisfactorily repaired by the immediate use of the split graft without too great a prolongation of the operative time or ex-

cessive increase in operative risk. The desirability of having such a defect remedied at the initial operation is self-evident.

The restoration of an organ, namely, the nose or the ear is impossible of accomplishment without the use of a skin graft. For the purpose of restoration of either the nose or the ear, the pedicle flap graft is the graft of choice because it has thickness and thus can be "molded."

Case V (Fig. 24). This 72-year-old male had a destructive epithelioma of his nose. Cauterization of the growth was necessary for its eradication. The restoration of the nose was accomplished by the use of a forehead pedicle flap graft. The defect produced by the pedicle graft was repaired using a split graft.

There are some fulminating necrotizing infections that destroy considerable areas of skin. After the acute infection has subsided the resultant defect must be corrected. The use of the split thickness graft is quite effective in covering over such a granulating defect as this would necessarily be.

Case VI (Fig. 25, 26, and 27). This young woman was the unfortunate victim of an acute necrotizing infection following the administration of an unsterile hypodermic. Before any orthopedic work could be considered the raw areas had to be covered. Split grafts were used with complete success.

Another important use for skin grafting is in the eradication of blemishes produced by moles, oil or "tattoo" marks and birth marks of various types. It is not entirely true that this indication is wholly a cosmetic one, but one may be assured that by the successful removal and repair of these blemishes the personal appearance and happiness of the individual will be greatly enhanced.

Case VII (Fig. 28 and 29). A young girl with a hairy mole on her face. A thick split thickness graft was used to repair the defect after the excision of the mole. A full thickness graft might well have been used in this instance; however, the uncertainty of securing a complete take in a child of this age prompted the use of the split graft in preference to the full thickness graft.

Following the release of old contractures the resultant skin defect is often astonishingly large. The use of skin grafting in these instances affords one the opportunity of restoring function to an otherwise useless or greatly functionally impaired extremity.

Case VIII (Fig. 30 and 31). A case showing extensive contracture of the hand of long standing. Restoration of the important function of flexion at the wrist was obtained in one operation using the split graft. A subsequent operation will be necessary to restore function to the fingers.

Case IX (Fig. 32 and 33). This case illustrates a contracture over an important joint with resultant practical complete loss of function of the involved extremity. Upon release of the contracture, the large skin defect was successfully covered using the split graft. This man is at present an oil field worker and is having no difficulty with this extremity whatsoever. Apparently the split grafts are withstanding the trauma of weight bearing and continued use of the knee joint quite satisfactorily.

The use of skin grafts in the surgical treatment of chronic leg ulcers is not generally appreciated. Chronic leg ulcers are so readily amenable to complete cure by the use of skin grafting that it seems unjust to permit such a patient to continue for years using local remedies of salves, bandages, etc., yet no doubt there are countless numbers of these patients under a physician's care at the present time. Regardless of the etiology of the leg ulcer, its duration or size, it can in almost 100 per cent of cases be permanently cured by the use of a skin graft. Because the ulcers are dirty granulating wounds, the split graft has been found to be the only graft which can be employed with assurance of a "take" and a satisfactory functional result.

Case X (Fig. 34 and 35). This is a 40-year-old male with a chronic leg ulcer of over five years' duration. By one operation he was completely healed and has now remained so for a period of over three years without any evidence of a recurrence. It is noteworthy that he is doing hard manual labor.

Post radiation burns, while not as common as in the past, are still of such frequent occurrence that their therapy demands consideration. With the increase in knowledge applicable to the use of x-ray and radium this lesion will no doubt decrease in frequency. For the successful permanent cure of a post radiation burn of long standing the entire skin thickness of the involved area must be excised. Because of its greater certainty of take the split graft is preferable in the repair of these defects.

Case XI (Fig. 36 and 37). The post radiation burn in this instance was the result of excessive therapy in the treatment of an epithelioma. The ulcer had been present for over three years. The permanent cure of this condition was obtained in one operation by the use of split-thickness graft.

An infrequent use of skin graft, but nevertheless an indispensable one, is its use in

cases requiring replacement for loss or deficiency of mucus membrane. The main examples of this are to be found in the cases in which there is deficiency of oral, nasal or orbital lining. The split graft is practically the only type of skin graft that is certain of take and technically possible to use in these localities.

Case XII (Fig. 38 and 39). In order to restore normal contour to this post traumatic deformity of the nose, a replacement of the deficiency in nasal lining was necessary. A split graft was used with quite evident success.

SUMMARY

To briefly summarize, it may be said that it is quite evident how important the use of the skin graft has become. A knowledge of the uses and use of the various types of skin grafts is essential if we are to afford the patient the best that present day surgery has to offer. The medical profession, and the laity as well, owe a great debt to the men who have been the pioneers in this field of endeavor.

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Thyroid Disease*

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For many years, a great deal of research work has been done by many authorities on the problems presented by the thyroid gland. Conclusions drawn from this work, though in many cases not based on proven facts, have established some truths that cannot be questioned.

The etiology of goiter problems has also been studied with its grouping as to geographical occurrence, heredity, maternal influence, and to the prophylaxis. Classifications have been made by the pathologist, the physiologist, and the clinician, each classifying the condition as to his personal viewpoints. But none of these have been satisfactory from all angles. However, in this paper, and for the man on the firing line, the patient, we might well use the simple classification of toxic and non-toxic goiter.

The thyroid gland does not act alone, but holds an important place in a complicated system of glands of internal secretion. A system as compared to the other systems of the body is little understood. Due to this fact, it is not hard to imagine a disturbance of the gland may upset the entire system, and a variation of symptoms results. Thus, the diagnosis "Atypical Goiter" is frequently made.

The symptoms of goiter vary, depending on the individual and the severity of the disease, some of which are presented by all goiterous patients, but seldom do we see a patient with all of them. In non-toxic goiter, we see an enlargement of the thyroid gland, usually with an absence of other symptoms, unless a choking sensation and dyspnea are present due to pressure from the enlarged gland. In the toxic goiter, the symptoms vary from mild to the extreme. In the mild case, the predominant symptom is often nervousness. We could hardly imagine a goiter without some type of nervousness. He may also complain of general weakness and of weakness of his legs, and of easy fatigue. Examination of this early case is often negative, except for a slight increase in the pulse rate, and some elevation in blood pressure. The metalobic rate may be normal. If such a case is left untreated over a period of time, these symptoms will increase in severity, and other symptoms will appear. He may then complain of restlessness, and that the night's rest does no good. If anything, he feels

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worse in the morning than before going to bed. A choking sensation appears, a feeling of exhaustion and shortness of breath on climbing stairs or other slight exertion. The appetite is good, often better than normal, in spite of a gradual loss of weight. At this time, the metabolic rate is usually increased. In the advanced case of toxic goiter, the exophthalmic goiter, a diagnosis is as a rule not hard to make. It is manifest by a marked increase in pulse rate, as well as increase in blood pressure. Complaints of shortness of breath, along with extreme muscular weakness are forthcoming. A fine tremor of the fingers of the outstretched hand, forcible throbbing of the arteries, flushing of the skin, and usually an increase in perspiration is noted. Some enlargement of the thyroid gland is often associated with anemia and emaciation. Bulging of the eyes, exophthalmia, and puffiness of the lids, gives the patient the appearance of being anxious or scared. An increase in the metabolic rate is always present in this type of case. Interpretation of the symptomatology of advanced hyperthyroidism or thyro-toxicosis is easy of accomplishment. The mild or atypical goiter, however, may tax the skill and judgment of the best diagnostician.

In addition to the history and physical findings, we have two important tests to help in the diagnosis of these cases—the basal metabolism and the Goetsch Test. Neither of these tests, however, are 100 per cent diagnostic. They should be considered only as confirmatory tests.

The basal metabolic rate has been accepted as our most accurate information in confirmation of a diagnosis. But we must remember that the findings from this test do not always run parallel to the toxicity, and can not be take as absolute. We occasionally see a case with definite signs and symptoms of hyperthyroidism, but with a normal or, in some cases, a minus metabolic rate. For this we have definite reasons.

1. It may be due to congenital defective glands.
2. It may be due to past disease, as inflammation, with resulting destruction and pressure.
3. It may be due to hypersensitization of a body tissue to a minimum amount of thyroid secretion.
4. Since 1930, Herzfeld of Berlin and Blum of Frankfort, have been working with a substance isolated from the blood, which they call "Catechin." They find that this is a hormone in the blood which is antagonistic to the substance in the thyroid, causing an increase in the metabolic rate, but which does not prevent toxic symptoms. It is their opinion that an overproduction of this substance may be responsible for the minus metabolic rates found in many goiter patients.

It is also possible to get a plus metabolic rate in a non-goiterous patient. This may be due to a neuresthenic patient, faulty apparatus, improper preparation of the patient for the test, or to faulty technique. For this reason, especially if the rate does not coincide with the symptomatology, the test should be repeated.

The Goetsch test is a most valuable test and should be in more common use. It should be used in all borderline cases, and its value considered with other signs and symptoms. In eighty per cent of cases, this test is confirmatory; it is many times suggestive and can be used in coming to a conclusion in indefinite cases, when the metabolic rate cannot be taken, or is not satisfactory. This test consists in the sub-cutaneous administration of eight minims of 1-1000 adrenalin. The patient should then be observed as to pulse, blood pressure and respiration for one and a half hours. These should be checked every five minutes fo rthe first hour and every ten minutes for the second hour. In a positive reaction, there is an early rise in blood pressure of ten to twenty points, and an increase in the pulse rate of twenty to fifty points. In thirty to thirty-five minutes there is a moderate fall followed by slight secondary rise and a second fall to normal in about one and a half hours. An increase in nervousness and magnification of other symptoms may also be noted during this period. In a negative reaction, only a slight rise in blood pressure and pulse rate are noted, and this returns to normal in about ten to fifteen minutes.

The management of the goiter patient depends again on the type and stage of the disease. His treatment is both medical and surgical. It is not the purpose of this paper to discuss the surgical treatment of goiter, but regardless of our stand, we must admit that the surgical method has its indications. It is generally understood that adenomata of the thyroid do not spontaneously disappear, and that when thyrotoxicosis develops in an individual, surgery is the method of choice, if ultimate cure is to be achieved.

Every patient with a goiter, be it toxic or non-toxic, hyperplastic or adenomatous, has a problem on his hands. It should be determined definitely the type and stage of the disease before any type of treatment is instituted. If a patient develops a goiter in early life and lives to expectancy, he will probably at some time during his life develop symptoms and disabilities that can be def-

initely attributed to the thyroid gland. So it might well be said that all goiters are potentially dangerous.

The non-toxic adenomata is essentially a surgical condition. If treated medically, iodine should not be included, since its administration may activate the gland and the disastrous result of toxic adenomata result. Iodine then should in the great majority of cases be held for the pre- or post-operative treatment of toxic goiter.

The medical treatment is the type most employed, yet we know least about the results. It consists of instituting a period of complete rest and full feeding, to be followed by a return to as near full activities as can be accomplished. The employment of sedatives is nearly always necessary, at least in the beginning. The bromides or some of the barbital derivatives may be given three times a day for their general quieting effect. Experience teaches that the best effects are derived from the alternation of sedative drugs. Full feeding in these cases means simply giving the patient all he will eat. Usually the appetite is ravenous in the beginning and is best satisfied by numerous small feedings between the three full meals. Under careful medical treatment the subjective symptoms markedly recede, the pulse rate gradually falls and the metabolic rate becomes more normal. When we feel that no more can be accomplished by absolute rest, an attempt is made to slowly return the individual to his former economic status. It is freely admitted that in the majority of cases treated in this way a full rehabilitation is not accomplished and, due to this fact, many of these patients are later candidates for surgery.

Pre-operative care of the goiter patient is also a medical problem. In this case, in addition to the bed rest, full diet and necessary sedatives, is the use of iodine, usually in the form of Lugols solution. The dosage of this drug depends on the case, the stage of the disease, the duration, the age of the patient and whether the patient has had iodine before or not. The prompt and proper administration of iodine to the toxic goiter will beyond a question give relief from symptoms of the toxicity and in the more toxic, exophthalmic goiter is a life-saving procedure. Special consideration must be given to any other pathological condition. In almost every medical journal is a paper on the management of goiter in the presence of some pathological condition, which in itself speaks for the magnitude of this problem. Home treatment is most often used in the pre-operative care, because it is necessarliy continuous over a long length of time. The fear and anxiety that accompanies hospitalization may often, at least for a time, tend to make some patients worse. When the proper environment and care cannot be had in the home, then the interest of the patient will best be conserved in the hospital.

As to medication, iodine and bromides or some other sedative as needed for nervousness are usually all that are needed. Digitalis may be indicated if heart symptoms are prominent. Iodine may be given to all goiters regardless of the type in the pre-operative care. In the very sick, large doses need not be feared. Sixty minims per day for a ten-day period are safe and satisfactory when indicated.

The fluid intake must be abundant in these cases, since their requirements are much higher than normal. The diet is important because of the high metabolic rate. Their caloric intake should be high and a maximum food intake should be encouraged. The response to this outline of treatment depends on the age and condition of the patient, the duration and intensity of the disease, the state of the thyroid at the time and whether the patient has taken iodine previously. When his condition and findings approach normal, he is ready for an operative procedure. There are two schools of thought regarding the surgery of this gland. It is often the opinion of the surgeon that surgical treatment is indicated whenever a diagnosis is made. From the internist viewpoint the treatment should be more conservative and only selected cases should be operated. It has been shown that the ultimate and, in some cases, the immediate response, has been as good in medical as in surgically treated cases. It is also true that the majority of cases treated surgically again become medical cases and their care may extend over quite a long period of time. Statistics are lacking in the results of both the medically and surgically treated cases, and in most cases have been followed for a period of only a few months.

In the post-operative treatment of most simple goiters, little needs to be done. Usually small doses of iodine will prevent symptoms of toxicosis. These patients, aside from the soreness in the neck, have few complaints, and a rapid subsidence of most of the symptoms follows immediately upon the operation. They are able to take water and soft foods from the second day of the operation, and on the eighth or tenth day are able to leave the hospital, free from symptoms, and after a few weeks' rest are able to resume their regular place in life. In the more toxic cases, severe reactions may occur, consisting in a severe exacerbation of all of the symptoms. The metabolism, fever, pulse rate and blood pressure may rise very high,

nausea and vomiting associated with excitement and restlessness may occur. Fortunately the administration of iodine through the post-operative period has greatly reduced the frequency of such a crisis. If such a reaction occurs, iodine must be continued in large doses. Dehydration and acidosis can often be counteracted by hypodermoclysis of saline and the intravenous administration of glucose solution. The excitement and restlessness may be controlled by morphine or some other sedative in as large a dose as is necessary. This type of patient will necessarily be hospitalized over a longer length of time and the ultimate result of his treatment will be slow to obtain and possibly disappointing to all concerned.

Regardless of the method of treatment employed on the goiter patient, his progress should be observed over a period of at least five years. It is a proven fact that no single treatment is satisfactory for all types of goiters and some cases seem to defy treatment of any kind.

I have attempted in this paper, to review thyroid disease from a practical standpoint to the practicing physician, without going into detail, and from it will conclude:

1. That the thyroid gland is not an entity in itself but is a part of a system of glands of internal secretion.

2. Symptoms of goiter vary in degree, depending on the severity of the disease and when mild or atypical may present a difficult problem, both as to diagnosis and treatment.

3. The basal metabolic rate and the Goetsch test, while very accurate and great in value, are not diagnostic, but are a diagnostic aid to be used in conjunction with other findings.

4. In goiter, the type and severity of the disease should be determined before any treatment is instituted.

5. The patient with non-toxic should not be given iodine therapy, because of the possibility of activating the gland, with a resulting toxic adenomata.

6. The methods of treatment now in use are medical, surgical and abolition of the gland with x-ray, all of which have their advocates.

DISCUSSION

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Thyroid Disease

The essayist's subject, "Thyroid Disease," is a very interesting and important one but of such magnitude and with a literature so voluminous that no one could hope to do more than touch upon the many important points involved in the brief time allotted to the author of this paper.

The B.M.R. furnishes an important bit of the evidence which goes to make up the final diagnosis of thyrotoxicosis. Another point of some importance in the diagnosis is a fairly constant relative hypertension with an increase in pulse pressure. Of very great significance are marked loss of weight and strength and marked gastrointestinal symptoms. These, especially if associated with a persistent marked tachycardia, should always make us realize that thyroidectomy upon such a patient will be attended by considerable risk. The pre-operative preparation of these patients should be very thorough and the surgeon should consider the advisability of stage procedures.

Physicians and surgeons throughout the world with the widest experience in the treatment of thyrotoxicosis have for many years taught and demonstrated that the quickest, most certain and most permanent relief for this disease is obtained by resection of the thyroid gland.

In his treatment of goiter the surgeon will be concerned chiefly with the following types: first, the patient with adenomatous goiter; second, the patient with hyperthyroidism; and third, the patient with adenomatous goiter and hyperplasia.

In the nodular goiter resection is indicated to prevent or relieve one or more of the following conditions—deformity, pressure, toxic effect, especially upon the heart and liver, and malignancy. Since 90 to 95 per cent of thyroid malignancy occurs in adenomata, the indication for removal of such lesions, without undue delay, is clear.

In the patient with toxic diffuse goiter resection is indicated for the relief of the numerous signs and symptoms associated with hyperthyroidism.

Adequate pre-operative preparation is especially important in the patient with hyperthyroidism, and in this connection I should like to emphasize the well-known but oft' neglected fact that Lugol's solution need not and should not be given except as part of the pre-operative and post-operative treatment of patients with toxic goiter.

Regardless of the claim of some surgeons that they are doing total thyroidectomies in practically all toxic goiters, I feel that most experienced surgeons will continue to do a reasonably radical subtotal resection rather than a so-called total removal—for obvious reasons.

In difficult or very toxic goiters a comparatively light anesthesia with one of the standard gases given alone or with ether through an intratracheal catheter is very satisfactory.

There is still a definite indication for a graded operative procedure in certain cases.

In the post-operative care of toxic goiter patients, medicated steam appears to be of considerable value in relieving the discomfort associated with accumulation of tenacious mucus in the trachea and bronchial tree.

The administration of adequate amounts of glucose and Lugol's solution intravenously during the first few post-operative days helps to maintain a satisfactory control of toxic symptoms as well as to supply the patient with the proper nutritional and fluid requirements.

The post-operative use of oxygen helps to control toxic symptoms and to prevent or relieve the development of post-operative pulmonary complications. It also appears to prevent or relieve the accumulation of excessive secretions in the trachea and bronchial tree.

Horseshoe Kidney*

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Fused kidney is not a sufficient novelty to justify the report of a single case. Nothing new has been discovered recently on the subject. My excuse for reporting a case is that it is fairly typical of horseshoe kidney with reference to history, findings, pyelograms, etc. Furthermore it serves to bring out many of the pertinent points relative to the obscurity of the symptoms and the ease with which it can be overlooked, even after some study, and it also illustrates the ease with which the diagnosis can be made once it has been thought of. The disease has been known since antiquity and much has been written about it. The literature prior to the advent of modern urological diagnosis is now only of academic interest, for no one could be so rash as to attempt to diagnose and treat a fused kidney without the aid of pyelography.

While the disease is fairly common, it still remains that an individual in private practice will probably see a very few cases in the course of his practice and it is likewise quite probable that practically every physician will see, if he is alert, one or more such cases. The incidence of known occurrence of this mal-formation has been increased from one-tenth of one per cent to one-half of one per cent, as computed by various authors since the advent of pyelography. In visiting with a considerable number of average physicians, I find that many have been in practice for years without ever having seen or suspected a case, which means perhaps that they have been overlooked.

My purpose, then, is to call attention to the subject again and to emphasize the necessity for a thorough urological examination wherever there is not only urological symptoms that are unexplained, but also any vague gastro-intestinal complaint. Furthermore, it is the part of wisdom to make this urological study before unwise and dangerous laparotomies have been resorted to. Many excellent papers, some of which are referred to in the bibliography, have been published which go into the embryology and anatomy of the subject and will not be discussed here.

The symptoms, while vague, do follow a fairly general course and are in the main about the same as reported by various authors. There are many cases, in fact, the majority, which do not have symptoms at all. It has been generally stated that the horseshoe kidney does not produce symptoms at all unless there is concomitant pathology; that is, unless the organ is infected, obstructed or contains stones or tumors. Guiterrez says that the position of the fused kidney itself produces symptoms, that even when the patient does not complain, in the majority of the cases there is evidence of nephritis found especially at autopsy and he insists that the anomaly should be called "horseshoe kidney disease." The symptoms in the absence of associated pathology are due to the pressure of the isthmus on the adjacent nerve plexuses and the disturbance in circulation. The symptoms of pressure would rarely be sufficient to justify surgical procedures in the absence of a more urgent indication. No doubt many patients suffer from

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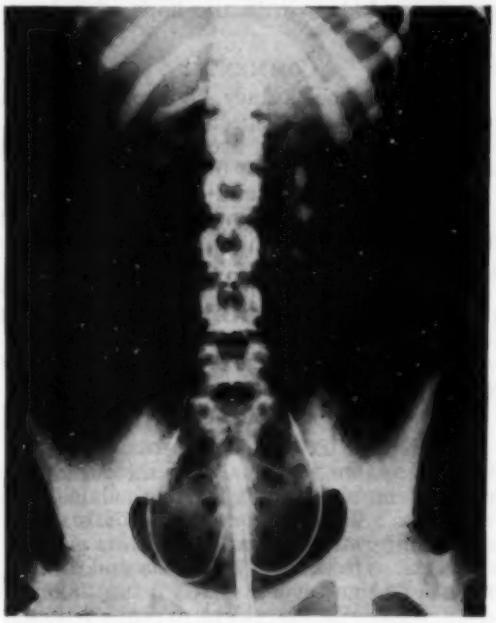
mild symptoms who never seek medical advice. The other most characteristic feature of the symptoms is that they are vague. None of them are pathognomonic. Gastro-intes-



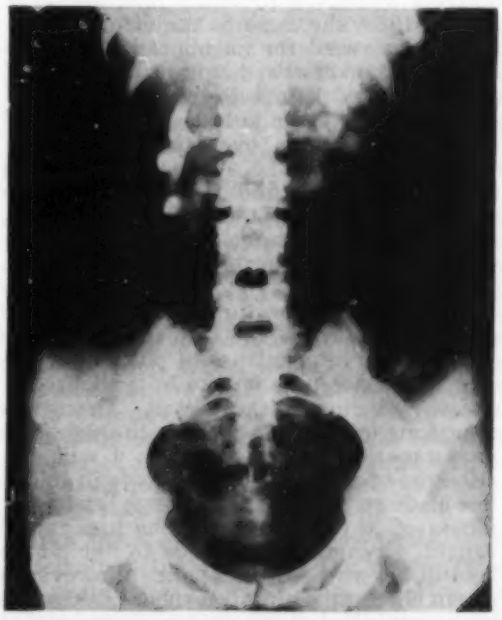
Case 1.—Bilateral retrograde pyelogram.

tinal disturbance, especially pain around the umbilicus, and constipation are more frequent even than are complaints referable to the urinary tract itself. Pain on hyperextension of the spine, Rovsing's sign, produces pain and is frequently mentioned. It was present in my case.

Physical examination—Palpation of the renal mass serves only to lead us to suspect fused kidney. Once it has been suspected we proceeded at once to pyelography, either intravenous, retrograde, or both. The pyelograms are so characteristic that having been seen a few times they are unmistakable. The pelvis and calyces are frequently bazaar, but the following characteristics are always present, namely:

The lower pole of the kidney approaches the spine. The lower calyx at least points toward the spine instead of away from it as in the normal pyelogram. The others may do likewise or at least they are in an anterior position rather than lateral. The ureters are shortened and are attached abnormally high. The renal mass is always lower than the normally placed kidney. If this diagnosis is made in the course of a routine examination and there are no symptoms, and if there is good function, of course nothing should be done. However, they should be regularly checked because any anomalous kidney is subject to extra hazards and irreparable damage may be done before it is suspected. The type of operation depends of course upon the pathology to be corrected. Emergency surgery may be indicated. Where neither portion of the renal mass is to be resected, division of the isthmus extraperitoneally is the operation necessary. Baker and Colston strongly recommend that nephropexy be done on the side of the incision at least, for they maintain that lack of proper drainage will certainly produce trouble. Only a few cases so operated have been reported, but they appear to be uniformly successful in increasing or maintaining renal function. The technique of the operation cannot be accurately described for no two cases are identical. The best incision is the extended classical lumbar approach with retroperitoneal exposure of the kidney, taking great care to visualize and ligate the anomalous vessels which are almost always present and also taking pains not to too greatly impair the circulation to the parenchyma in case it is not to be removed. Double mattress sutures behind the clamp will generally control hemorrhage. A portion of the kidney capsule or at least some fat should be placed over the divided stump.

I shall give a brief case report presently and will show you the pyelograms before and after surgery together with a motion picture in color of the operation itself. The



Case 1.—Intravenous pyelogram.

picture was not intended as a model in technique and was not taken to show publicly but rather it is one of a series that I have taken recently to show myself in slow motion a multitude of unnecessary maneuvers that I do with the hope that some of them can be eliminated. I recommend such a picture as a post-graduate course for anyone.

The patient is a married woman, age 20. Nothing significant in her past history or family history. She was seen first in June, 1938. Please note the complaints in view of what has been said above with reference to complete examination. Chief complaint is constipation. She had to take something about every night and constipation was always worse at the menstrual period. Backache, especially in the upper lumbar region, often worse when she gets up in the morning. She says she sleeps on her back and the pain is improved when she gets up. She has had urinary frequency for years, occasional nocturia, no pain or dysuria. She has had frequent attacks of mild pain in the lower abdomen, especially the right lower quadrant. Stooping also increases her backache.

Her physical examination was negative except for slight tenderness in the right lower quadrant, blood pressure 120/90, catheterized urine contained an occasional pus cell. The urea nitrogen was seventeen, sedimentation twelve, hemoglobin eighty-five per cent and R. B. C. 3,960,000. She had chronic, infected tonsil tags. She was dismissed without a diagnosis. She was seen again six months later with an acute follicular tonsillitis from which she promptly recovered. In March, 1939, she came to the office by ambulance prepared for an appendectomy following her mother's diagnosis. Her chief complaint was pain in the right flank, nausea, vomiting, fever 101 degrees, local and rebound tenderness over the right lower quadrant. The urine at this time showed four plus albumin and four plus pus with a multitude of bacteria, chiefly colon bacillus. Intravenous pyelograms which are here for your inspection suggested horseshoe kidney. Cystoscopic examination showed a moderately inflamed bladder throughout. Catheter passed on the right side with ease, the urine contained large quantities of pus. The catheter would not pass on the left, apparently due to direction of the ureter. There was some function on both sides but the right side shows marked hydronephrosis. I will describe the operation with the movie in colors. She made an uneventful recovery, has had no illness of any kind since. She has gained weight, strength and attends to her household duties without complaint. However, a recent check-up with intravenous pyelograms shows some hydronephrosis in the remaining portion and the urine containing no pus, but four plus albumin and a good many casts. There is no change in the blood pressure and the eye grounds show no nephritis. I would like very much for you to tell me whether at this time I should do an nephropexy on the remaining kidney with the hope of improving function.

COMMENTS:

1. Horseshoe kidney is more common than is generally suspected.
2. The symptoms are often vague and are not confined to the urinary tract.
3. Enough was found at our first examination although the findings were few and the symptoms were indefinite to have justified a more complete examination.
4. The diagnosis is easy once it is suspected provided modern urological methods are used.
5. Surgery adjusted to the particular case is the only treatment.

CASE NO. 2: C. S., age 33 years, unmarried, came to the Clinic six weeks ago with a complaint of general malaise and weakness. He also complained of his body aching all over, especially the knees and other joints. He was very nervous and drowsy. He has had no fever recently or any urinary disturbance. He had slight dysentery recently and says that change of position produces dizziness. It is interesting to note that three years ago he had an intestinal disturbance which was diagnosed amebic dysentery, for which he was treated for a year with carbosome and emetine. At routine examination the Wassermann was found to be four plus and remained so on further checks and the spinal fluid Wassermann was also four plus. He was put on anti-leutic treatment but did not improve. Routine urinalysis showed persistent red blood cells and for this reason only he was referred to me for urological consultation.

The cystoscopic examination of the urethra, bladder neck and trigone was normal. Catheters pass with ease on the right side but not as far as normal. On the left side the catheter stopped at the pelvic brim. There was a very slow urinary drip. Flat picture shows what is apparently a stone just above the right pelvic brim. Retrograde pyelogram showed markedly deformed kidney low on both sides. Pelves approximate the spine. Calyces are pointing inward, ureters far to the outside and inserted high. The calyces and pelves are dilated. Check by intravenous pyelogram shows the same picture and in one picture the isthmus is well defined. These findings are sufficient for a positive diagnosis. It appears that this patient should be operated perhaps after further anti-luetic treatment.

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Undulant Fever (Brucellosis)*

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Undulant fever is primarily a disease of animals transmitted to man. The animals concerned are goats, cattle and swine.

The disease was discovered in man on the Island of Malta. Marston gave the first account and described the clinical picture and postmortem findings under the name of Mediterranean remittent fever. Bruce (1887), discovered the causative organism in goats and called it Micrococcus Melitensis. Bang, in 1897, described the etiological agent of infectious abortions in cattle and named it Bacillus Abortus. Evans, in 1917, compared the two organisms and showed them to be the same morphologically, bacteriologically, and chemically. Traum (1914), isolated B. suis from swine.

The disease is spread by contact with infected animals and meats or through contaminated dairy products such as butter, cheese and ice cream.

There is very little known about the pathology of the disease, but Parson and Poston have reported autopsy of a case simulating Hodgkins disease in which they cultured the organism from the Lymphnodes.

The relative frequency of symptoms is in the following order: fever, sweating, chills, fatigue and weakness, anorexia, upper respiratory symptoms, nocturia, headache, abdominal pain, urinary frequency, loss of weight, and joint pain. The following symptoms may also be present: insomnia, nervousness, irritability, poor memory, impotency, and the patient may be depressed, despondent or disheartened.

The signs in order, according to Passarelli and LeRoy Sloan of Cook County Hospital, are abdominal tenderness, chest findings, palpable spleen, inflammatory joints and palpable liver. However, Calder of San Antonio states that palpable liver is more common than the spleen.

In a study of the blood picture of brucellosis, Munger and Huddleston found a tendency to microcytic anemia in thirty-five per cent of the patients studied and a tendency to macrocytosis in nineteen per cent. The average ratio was thirty-nine cells smaller than normal, thirty-seven normal and twenty-four larger than normal instead of the average ratio of thirty-three: thirty-four: thirty-three. The red blood cells varied in size from three to ten microns. In their study of the white blood cells they found a tendency toward a leucopenia with a relative and absolute monocytosis, however, after injection of Brucellin there was a rise in the count. Many of the small lymphocytes are larger than normal which simulates infectious mononucleosis. Thirty to eighty per cent of the small lymphocytes appear to be of this type.

DIAGNOSIS

It is a fairly well accepted fact that, to make a satisfactory diagnosis, the agglutination test, skin test and opsonocytophagic test should all be carried out because it is possible only to have one of the three present. The agglutination test should be carried out first, as the skin test causes an increase of agglutins in practically all cases. It is also advisable to use a culture of B. tularensis as a control. The skin test may be carried out either by intradermal injection of Brucellergin or by use of weak dilutions of the vaccine.

The opsonocytophagic test, which is a test based upon the ability of the neutrophiles to phagocytise the Brucella Abortus, is usually done by Huddleston's technique. Huddleston and his associates have used the op-

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sonocytophagic test to classify their undulant fever cases as susceptible to the disease, infected or immune. They classify an individual who has a negative agglutination and negative skin test with an opsonocytophagic test of zero to forty as infected. A case which has a negative agglutination positive skin test and an opsonocytophagic test of zero to forty as infected. A case which has positive agglutination, positive skin test and an opsonocytophagic test of zero to forty as infeced. A case which has a negative agglutination, positive skin test and an opsonocytophagic test of sixty to one hundred as immune. A case which has a positive agglutination positive skin test and an opsonocytophagic test of sixty to one hundred as immune.

Keller, Pharris and Gaub compared the values of these tests and found that of one thousand, two hundred and forty-seven individuals tested, ninety-four and four-tenths per cent had negative agglutination and skin test; four and eight-tenths per cent had positive skin tests; one per cent had positive agglutination test; forty per cent had marked phagocytic activity; and eight and four-tenths per cent had moderate phagocytic activity; and fifty-one and six-tenths per cent had no phagocytic activity. It is also interesting to note that there is no definite relation between the severity of skin reaction and opsonocytophagic activity.

Angle and Algie of Kansas City did the skin test on 7,122 children and found six hundred and forty-two, or nine per cent, of them positive. They put out a questionnaire with leading questions and found that two hundred and eight of this group had nervous symptoms, one hundred and seventy-two had headaches, one hundred and fifty-seven had rheumatic symptoms, seventy-one were constipated, and twenty-two had fever; thirty-eight and seven-tenths per cent of this group had two or more of the above symptoms. In a control group of one hundred students they found twenty-six had nervous symptoms; fifteen had headaches; six had rheumatic symptoms; two were constipated; and one had fever; of this group thirteen per cent had two or more of the above symptoms.

From the above findings of Angle and Algie we are definitely led to believe that we may have a higher incidence of the disease than is thought at present. It is possible we are overlooking the diagnosis. Another fact that brings this out is the large number of positive reactions to the test for Bangs in cattle. Newman reported out of fifty-two thousand herds tested in Missouri sixteen thousand had reactors; six hundred forty thousand cattle were tested, and of these fifty-two thousand were positive reactors.

TREATMENT

At the present time there is no specific treatment for undulant fever. There are a number of different types of treatment discussed in the literature, and a number of these reports conclude that certain types of treatment are successful, but there is no series of cases which has been reported at the present time which is large enough to conclude whether any of the treatments are of much greater value than symptomatic treatment.

There are a number of cases reported in the literature in which polyvalent serum has been used. It has been found in a number of these cases that by giving 50 c.c. of the polyvalent serum intravenously daily for six days the patient became clear of fever after a short period of time. The symptoms were found to continue for two to three weeks after this type of treatment and then the patient apparently recovered. To read the results of this type of treatment, it sounds very convincing; however, there are other cases reported in the literature of serum therapy in which the results are not so convincing, and because of the price of the serum and in view of the fact that the results may not be satisfactory the series of cases treated in this manner has not been very large.

Prickman, Bennett and Krusen reported a series of cases treated at Mayo Clinic by Kettering Hypertherm. These cases were given three sessions of fever at three-day intervals with the temperature between one hundred and five to one hundred and six. They reported failure in thirty-three and three-tenths per cent of the cases and sixty-six and six-tenths per cent cure. Their series is also too small to draw any conclusion from.

There are a number of cases reported in the literature that have been treated with sulfanilamide, prontosil and neoprontosil. A number of these have shown improvement. However, to off-balance this, there are a number of cases reported as cures that may have only been remissions instead of cures. DeBono of the Royal University of Malta reports a series of twenty-five cases in which prontosil was used in doses of about sixty grains daily. Of this series, five were unable to tolerate the drug and four of the cases were given the drug over a period of twelve days instead of the average of nine days. Nineteen patients showed no apparent effect from the drug. In six cases the fever came down and stayed down but later the fever recurred in all except one case. In a control series of twenty treated symptomatically, two were still running fever when he made his report. He concludes that prontosil is of no value in treating the disease in Malta as there a case of undulant fever usually

lasts about six weeks and clears up spontaneously, and occasionally a case lasts a year.

Wainwright has reported seven cases treated with neoarsphenamine in which six obtained good results and one case, in which the diagnosis was not definite, showed no results.

At present vaccine therapy seems to be the vogue and is given in increasing doses from 0. 2 c.c. up to 1 c.c. or to tolerance and may be given over a period of several weeks. There is some debate as to whether it is of more value than foreign protein therapy. However, it is very interesting to note that the patient in a large number of cases feel much better when they are taking the vaccine whether they are free of fever or are not. It is like all other forms of treatment developed up to the present; however, its value is in doubt.

Dr. Calder of San Antonio has brought out a fact that is interesting to note in regard to treatment and that is that the giving of nicotinic acid by mouth or intravenously seems to shorten the course of the treatment.

Another interesting fact mentioned by a number of writers is that a change to a higher climate often shortens convalescence.

At this point I would like to report a case in which serum therapy, sulfanilamide and vaccine were all used.

M. M., age 32, a farmer, who apparently was in very good health, accompanied his wife, who was pregnant, to the office. While there she mentioned the fact that he had not been feeling well and stated that he had fever. He refused examination but returned on August 30, 1938, still complaining of fever and rheumatic symptoms in his joints and back. He also stated that he had lost about 30 pounds in weight. Upon questioning him, the information was obtained that he had had fever for a period of about five weeks with rheumatic symptoms, fatigue and weakness, anorexia, chills and upper respiratory symptoms. In attempting to gain further information, a history of having treated a sick cow previous to the onset of his illness was obtained. The cow had died without a diagnosis being made.

Examination revealed a well-developed, well-nourished white male about 32 years of age who weighed 200 pounds. His temperature was 101 degrees and pulse was 100. B. P. 120 over 78. There was abdominal tenderness with slight enlargement of spleen and liver. W. B. C. count was 5,200 with a predominance of lymphocytes.

A tentative diagnosis of undulant fever on typhoid was made. An agglutination test was positive for undulant fever. The patient was given 25 c.c. of Brucella Mellitensis Antiserum and 25 c.c. the following day. His temperature dropped to normal on the following day and remained normal for five weeks and he was also free of symptoms during this period but did not regain his weight. At the end of the five weeks' period he returned to the office complaining of the same group of symptoms as when originally seen. He had also lost five pounds more weight. At the time it was suggested that he take more serum but he stated he was unable financially to do so. He was put on sixty grains of sulfanilamide for the next nine days and his temperature again dropped to normal where it remained three weeks. He again returned complaining of similar symptoms and was started on another course of sulfanilamide which was stopped about the fifth day because of a marked leukopenia. However, after about four days the treatment was continued and his temperature again dropped and remained normal about two weeks. At the end of this time he again had fever. At this time it was decided that vaccine might be of value and he was given 10 c.c. of Lederle's Brucella Melitensis vaccine starting with a dose of 0.1 c.c. and gradually increasing the dose to 1 c.c., the doses being given at intervals of three to five days depending upon the reaction. A short time after this course of therapy the patient's temperature dropped to normal and he has continued to remain free of symptoms. A fact of interest is that he began to feel improved immediately after vaccine was started even though he had fever.

I think, however, this case demonstrates that we should be slow in evaluating any type of treatment in undulant fever as there may be a return of symptoms after any type of treatment and it may be that this case cleared up spontaneously as has been stated occurs in the cases on the Island of Malta.

CONCLUSIONS

1. To make a satisfactory diagnosis of undulant fever the skin test, agglutination test and opsonocytophagic test should all be used.

2. In view of the number of positive skin tests found in testing a large group of school children and the large number of cattle that have positive reaction to the test for Bangs disease we are probably overlooking cases of undulant fever.

3. At the present time there is no definitely proven satisfactory treatment for all cases of undulant fever and there is no series reported in the literature large enough to make any conclusion as to the most satisfactory treatment.

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DISCUSSION

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Undulant Fever (Brucellosis)

Your State Health Department at the present time has no accurate data as to the incidence of brucellosis in Oklahoma as we cannot take these data from laboratory reports of serum agglutinations, as the interpretation of positive agglutinations in human blood in terms of active infection is not an easy matter since as many individuals have brucella agglutinins from a past infection or from recent exposure to infective materials, as in the case of veterinarians, packing house workers and breeders of livestock.

Doctor Fry has very ably brought out the fact that to satisfactorily diagnose brucellosis, agglutination, skin and opsonocytophagic tests must be carried out and correlated with the clinical findings. In 1939 when we compiled morbidity reports for brucellosis from laboratory reports, we had 372 cases for the year, while this year, where we are compiling them from the weekly morbidity report cards sent in by the physicians of the state, who have laboratory reports and clinical data at hand, we have only had 25 cases reported for the first three months of 1940. We feel certain that many cases have not been reported to us. We would greatly appreciate physicians reporting all cases of those diseases which are designated by law as reportable diseases, as prompt and accurate notification of the existence of a communicable disease is one of the first requirements for its proper control by your Health Department.

Your State Health Department laboratory is equipped to do agglutinations and opsonocytophagic tests and in selected cases cultures and guinea pig inoculations for the laboratory diagnosis of brucellosis. Opsonocytophagic tests must be done within six hours after blood is withdrawn on a citrated specimen of blood, so it is recommended that the blood be brought in personally to the laboratory rather than sent in by mail for this particular test.

The U. S. Department of Agriculture, Bureau of Animal Industry, in cooperation with your State Department of Agriculture has been doing agglutination tests on cattle since 1934. Under this program positive reactors were slaughtered and the owners paid indemnity by the Federal Government. Two years ago Congress passed a law requiring matching of this indemnity by State Governments. The last state legislature did not appropriate funds for this purpose, so at the present time no indemnity is being paid in this State. However, the testing program on a voluntary basis has continued and at the present time no indemnity is being paid in in Oklahoma. For a herd to be accredited, all reacting cattle must be destroyed and the rest of the herd pass three successful tests within a period of one year. For the month of March, 21,856 cattle were tested and 733 reactors were found.

The Standard Milk Ordinance is operating under the supervision of the State Health Department in 32 cities in the State. This ordinance requires that wherever raw milk is being sold the animals must be tested for brucellosis once yearly and reactors must be destroyed. No indemnity is paid for these animals. Thus, we can readily see that the incidence of brucellosis in humans in this State can be decreased greatly by education of the public to use Grade A raw milk which has been pasteurized.

*Epidemiologist, Oklahoma State Health Department, Oklahoma City.

• EDITORIALS •

POLICY AND PROGRAM OF THE NATIONAL PHYSICIANS' COMMITTEE FOR THE EXTENSION OF MEDICAL SERVICE

Evidence of Results

Two years of aggressive effort in defining and clarifying the issue (political control of medicine), in unifying the profession and informing the public has produced spectacular results.

In his speech on October 31st at Bethesda, Maryland, dedicating the National Institute of Health, President Roosevelt said:

"Neither the American people nor their government intend to socialize medical practice any more than they plan to socialize industry. In American life the family doctor, the general practitioner, performs a service which we may rely upon and trust.

"No one has a greater appreciation than I of the skill and self sacrifice for the medical profession. And there can be no substitute for the personal relationship between the doctor and patient which is characteristic and a source of strength of medical practice in our land."

Priceless Gains Made

THIS PUBLIC EXPRESSION OF OPINION REPRESENTS NOTABLE AND PRICELESS GAINS. IT WILL BE TRANSITORY OR PERMANENT IN DIRECT PROPORTION TO THE DEGREE OF THE SUSTAINING PUBLIC OPINION. THIS IS THE RESPONSIBILITY OF THE MEDICAL PROFESSION.

TO THE EXTENT THAT THE PUBLIC IS INFORMED OF THE AIMS, METHODS AND PHILOSOPHY OF AMERICAN MEDICINE WILL IT FIGHT AND DEFY REGIMENTATION AND UPHOLD THE EXISTING PATTERN OF MEDICAL PRACTICE.

Dr. Cary's Statement

In summarizing the discussions and conclusions of the individual members of the Management Committee of this institution, Dr. Edward H. Cary (Dallas, Texas), its chairman, said in part:

"The medical profession now represents the only important group in the United States which, while harrassed from within and without, has shown no slightest sign of capitulation or even of retreat.

"On the basis of this fact, it has automatically placed itself in the position of an intellectual leadership of those individuals, groups and institutions which seek to preserve the important elements of individual freedom and initiative and the principle of 'Free Enterprise.'

"If we live up to this opportunity and the serious responsibility it entails, the physicians of this country can—while preserving the independence of American Medicine—most importantly and vitally serve their country during its period of crisis and greatest stress."

IF THE INDEPENDENCE OF MEDICINE, OUR DOCTOR AND PATIENT RELATIONSHIP, AND OUR PATTERN OF MEDICAL PRACTICE ARE TO BE PRESERVED, WE MUST PRESERVE THE PRINCIPLES UNDERLYING OUR FREE INSTITUTIONS.

TO THE EXTENT THAT SUCCESS MAY ATTEND THESE EFFORTS, THE MEDICAL PROFESSION WILL BECOME THE MOST IMPORTANT SINGLE FACTOR IN SAFEGUARDING THE UNDERLYING PRINCIPLES OF INDIVIDUAL FREEDOM AND IN PRESERVING THE "AMERICAN WAY OF LIFE."

The accomplishment of this result, in any important degree, demands sacrifice on the one hand and active co-operation on the other

of the rank and file of the medical profession.

Never at any time in the past has there been a President or an administration in Washington which so urgently needed the intelligent, understanding co-operation of the general public. Never before was there such an opportunity for American physicians to take truly effective steps to preserve THE INDEPENDENCE, THE PHILOSOPHY, AND THE VERY SOUL OF THE PROFESSION AND, AT THE SAME TIME, BEST SERVE THE NATIONAL ADMINISTRATION AND THE UNITED STATES DURING ITS PERIOD OF GREATEST STRESS.

Nature of Activities and Objects

It is essential that funds be provided for:

1. A continuous flow of articles to more than eighty medical journals.
2. Stimulating discussion of this all-important issue in forty-eight state medical meetings, and in the meetings of two thousand county medical meetings and conferences.
3. Preparing and providing for the preparation of articles and releases for thousands of newspapers and hundreds of magazines, and arranging for their publication.
4. Speakers for medical and public meetings and arranging for physicians appearing before local groups on local radio broadcasts.
5. Radio broadcasts and the preparation of speeches and radio broadcasts to the generally available, and the providing of electrical transcriptions of short speeches and radio broadcasts and arranging for their effective use.
6. The maintaining of strategically important public contracts.
7. The arranging of conferences with boards of hospitals and clinics; business, industrial and other lay groups; and for group meetings of laymen.

All to the end that:

a. Political control of medicine can be avoided;

b. The independence of the profession and the pattern of medical practice be preserved; and

c. The American people can be resold on the incomparable advantages of the American Way of Life.

Why Such Endeavors

With the adjournment of Congress all pending legislation, including the Wagner National Health Bill, is killed—but—

It can be taken for granted that, upon the convening of the new Congress, Senator Wagner will introduce a new Health Bill with similar provisions. There are new senators who will be seeking the limelight. There are politically influential groups which will continue to demand drastic—even revolutionary — legislation dealing with health and medical practice.

The menace of political control of medicine and medical practice is real and constant. The advocates of such control are many. They are persistent and vigorous in their demands. ETERNAL VIGILANCE AND AGGRESSIVE, DEFENSIVE ACTION ARE ESSENTIAL IF WE ARE TO PRESERVE OUR INDEPENDENCE.

The Key To Successful Effort

The degree of effectiveness of this effort will be determined by one group — THE PHYSICIANS OF THE UNITED STATES.

In direct proportion to the extent to which the physicians seriously join this crusade will we be able to enlist the support of other groups and interests. With the nearly unanimous support of the rank and file of the medical profession, we will earn and secure the important support of other interests.

Two things are needed from physicians:

a. Contribution
b. Active, cooperative effort.

Will you enlist in this crusade?
Will you give of your time?
Will you give financial support?

You will receive a communication, if you have not already, of which the above is an abstract. There will be enclosed an envelope for reply.

Give the matter careful consideration, then support this movement to the extent your judgment dictates.—L.S.W.

• THE PRESIDENT'S PAGE •

The story of the boy sheep herder who cried "Wolf! Wolf!" must not be repeated by American Medicine. Doctors of Medicine in Oklahoma and all America must protect the public from the wolves who would use their miseries and emotions for ulterior purposes. Political medicine is a more savage scavenger than any other proposal that has ever before been suggested and proposed in one form or another since the advent of democratic government and the right of free enterprise.

American Medicine has been and always will be progressive. I do not believe there is a single doctor in America who would not willingly alter his method of practice, even unto a sacrifice to himself, were he convinced that political medicine would be to the best interests of the public. Facts from countries having political medicine do not, however, prove the point on this subject. Death rates for every cause of death, as well as the life expectancy of the American public, prove graphically that the American way is still the best way.

To protect the public in matters of health is the responsibility of the medical profession. Its response must not be passive, but rather progressive and constructive. The Wagner Health Act and the Wagner-George Hospital Bill again will be brought to the front in Congress. In our own state a legislative proposal will be submitted to place the control of medicine in the hands of the minority rather than the majority. What will be your response? Will you accept or reject this responsibility of protecting the public on matters of health?

We are still free and independent citizens with the right and privilege to express our opinion of fancies, theories, and even pipe dreams of idealists, the outcome of which will be directly reflected from the individual doctor's attitude and activity. Is it worth any of our time, and what do we intend to do about it? Let us accept the responsibility and challenge.

Henry H Turner

President.

ASSOCIATION ACTIVITIES

Interesting Data Is Given On State Insurance Fund

The Board of Managers of the State Insurance Fund, composed of Governor Leon C. Phillips, Attorney-General Mac Q. Williamson, and the Secretary of the State Insurance Board, Mr. B. E. Harkey, in a recent meeting made public interesting information regarding the operation of the Insurance Fund as it concerns both the medical profession and the public.

The State Insurance Fund began operation July 1, 1933, with an appropriation from the State Legislature in the amount of $25,000. This original appropriation was returned to the general revenue fund the following year, and since its inception the Fund has operated and paid its compensation and medical claims without a single cost to the taxpayers—an enviable record.

Since the establishment of the Fund, medical and hospital bills paid, as of October 1, 1940, have amounted to $710,339; compensation, $1,880,860; and the operating expense has amounted to $357,304. Further figures concerning the medical and hospital payments bring to light the fact that the average monthly percentage paid by the Fund for these services, to April 1, 1940, amounts to 24.35 per cent, while this same cost for like services paid by other companies in Oklahoma writing the same type of business has averaged only 16.04 per cent.

In April of 1940, Mr. Mott M. Keys, formerly of the State Insurance Department, was appointed director of the Fund and, understanding that the Fund paid thousands of dollars annually to the medical profession of Oklahoma, took steps on the advice of the Board of Managers to reorganize the medical and hospital division into a more compact and efficiently managed unit, in order that the doctors of Oklahoma might receive more prompt attention for their claims.

In line with this reorganization, the Board of Managers appointed Dr. Earl D. McBride of Oklahoma City as temporary medical director, with the understanding that he serve without remuneration. Dr. McBride served in this capacity from July 3 to September 20, when he resigned and at which time the Board of Managers extended to him a personal vote of thanks for his services, which were rendered without cost to the state or to the Insurance Fund.

Following Dr. McBride's voluntary resignation, the Insurance Fund requested of the Council of the Oklahoma State Medical Association that a committee be appointed to which the Fund might refer questions concerning its medical policy on controversial questions.

There is no doubt that the Fund is now in a position to render its services, insofar as the medical department is concerned, in a much better manner than has heretofore ever been possible. Mr. Keys has requested that the doctors of Oklahoma be advised of the Fund and the Board's sincere appreciation for their patience and cooperation in assisting the Fund toward a solution to a difficult problem.

The medical profession of Oklahoma has had reasons in the past to be somewhat disgruntled over the management of the Fund in some particulars, but there is no doubt that every effort is being made to operate the Fund on a business and actuarial basis that will be of mutual advantage to both the Fund and the profession. It is sincerely hoped that continued cooperation will be extended the Fund and that the original intent behind the establishment of this service not be lost. The Fund was organized in order to render a service to society which could not be obtained through private business and which, by its record of payment, has greatly added to the benefits enjoyed by employees of employers who are not able, for one reason or another, to comply with the regulations of private insurance carriers, other than at a prohibitive cost.

The medical profession of Oklahoma is to be complimented for the part it has played in this service.

Pediatrics Course Will Start In Fifth Circuit December 20

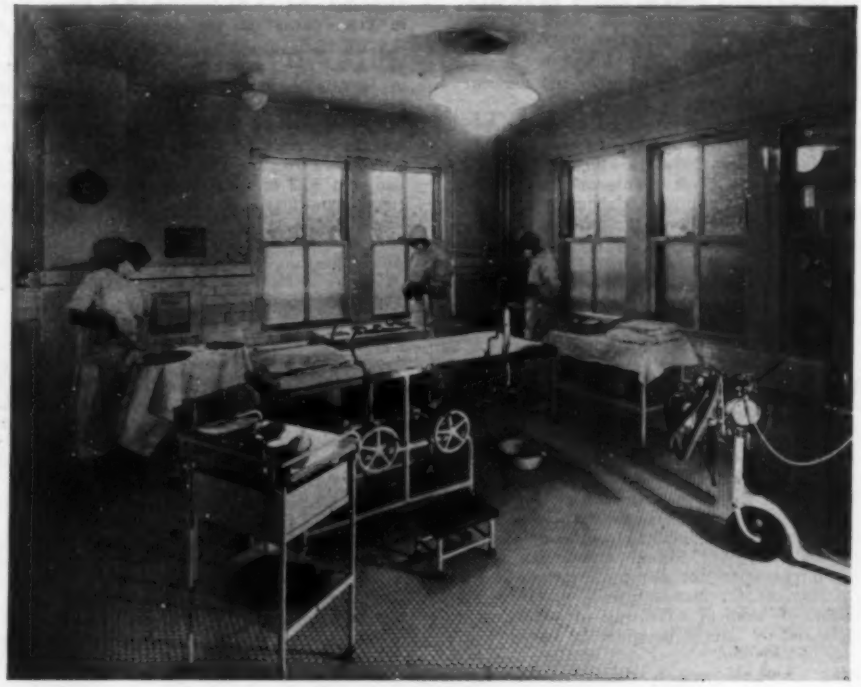
The Post-Graduate Pediatrics course will open the week following Christmas in the counties of Oklahoma, Lincoln, Pottawatomie, Seminole, Hughes, Cleveland, McClain and Garvin and will include the teaching centers of Oklahoma City, Shawnee, Wewoka, Norman and Pauls Valley. The itinerary has been announced to include Norman on Monday evenings beginning December 30, Pauls Valley Tuesday evening; Oklahoma City Wednesday evening other than the first lecture which will be Saturday evening January 4th; Wewoka Thursday evening; and Shawnee Friday evening. In Oklahoma City all lectures and clinics will be held at St. Anthony Hospital in the Class Room of the Nurses Home.

To date, a total of 366 physicians have taken advantage of the Post-Graduate Pediatrics course. Dr. James G. Hughes, instructor, of Memphis, Tennessee, has just returned from the National Pediatric Academy meeting which, this year, was held in Memphis. Doctor Hughes had an exhibit in the scientific section of the National Academy meeting. The course consists of 10 didactic lectures illustrated by motion pictures and lantern slides. Plans have been made in each center for clinics over patients.

Doctor Hughes will make his home in Oklahoma City during the ten weeks' period while his course is being offered in central Oklahoma. Mrs. Hughes and their young son will arrive in Oklahoma City immediately after New Years. During the past ten weeks Doctor Hughes and his family have resided in Stillwater, which was the center of the circuit in north central Oklahoma.

During the period the course operates through January, February and half of March, Doctor Hughes will be available for lay lectures to study clubs and P.T.A. groups, or civic clubs on any one of the following subjects: 1. Keeping the Well Child Well (Illus. lantern slides). 2. Recent Medical Discoveries. 3. Tuberculosis in Children (Illustrated). These lay lectures can be adjusted to meet any period of time, so states Doctor Hughes, and are without cost to lay groups. Officers of County Medical Societies may obligate Doctor Hughes in any of the foregoing counties immediately with chairmen of study clubs or groups, and detailed arrangements can be made later for any of his lectures as listed above by writing the Post-Graduate Committee office, Oklahoma State Medical Association, 210 Plaza Court, Oklahoma City, or by telephoning 7-1420, Oklahoma City.

Physicians desiring to register for the course in any of the foregoing centers which opens the week following Christmas should mail their enrollments with their fee of $6.00 attached to: 210 Plaza Court, Oklahoma City. With this fee each physician receives a printed manual containing all of the lectures of Doctor Hughes delivered in his course, and those who attend seven or more of the lecture sessions will receive a certificate of attendance awarded by the Oklahoma State Medical Association.



One of Polyclinic's three modern operating rooms.

EFFICIENTLY EQUIPPED OPERATING ROOMS

Correct equipment complements the surgeon's skill at Polyclinic. One example of thoughtful planning is a modern sterilizing plant, accessible to all operating rooms. Another is a special cabinet for warming blankets. There is new and specialized equipment for the study and care of urological cases.

At Polyclinic, operating room service is maintained on a 24-hour basis with a staff of anaesthetists and specially trained graduate nurses on duty at all times.

MARVIN E. STOUT, M.D.
Owner

JOHN A. CUNNINGHAM, M.D.
House Surgeon

POLYCLINIC HOSPITAL

THIRTEENTH and ROBINSON OKLAHOMA CITY

State Medical Reserve Officers Called To Active Duty

By mid-November, twelve medical reserve corps officers who are members of the Oklahoma State Medical Association had been ordered to active duty by the Eighth Corps Area Commander.

The physicians, now serving actively in the medical corps of the U. S. Army, are:

Dr. William Douglas Anderson, Captain, Claremore; Dr. Bernard Eugene Bullock, First Lieutenant, Clinton; Dr. William Walker Cotton, First Lieutenant, Clinton; Dr. Paul Joseph Craden, First Lieutenant, El Reno; Dr. Hervey A. Foerster, Captain, Oklahoma City; Dr. Gustavus D. Funk, First Lieutenant, El Reno.

And Dr. Ralph W. Hubbard, Captain, Oklahoma City; Dr. Howard C. Martin, First Lieutenant, Oklahoma City; Dr. Fred Lindley Patterson, Jr., First Lieutenant, Mountain View; Dr. William G. Paul, First Lieutenant, Durant; Dr. Alvin Winfred Paulson, Captain, Clinton; Dr. Galen Alonzo Rogers, Captain, Talihina.

UNINTERRUPTED SUPPLY OF DOCTORS FOR PREPAREDNESS IS VITAL TO NATION

"An uninterrupted supply of qualified doctors of medicine to meet the future demands of adequate national preparedness and the needs of the civilian population is vital to the future of our nation," The Journal of the American Medical Association declares in a recent issue. "The Committee on Medical Preparedness of the American Medical Association urged last July that preparation for the conscription of the man power of this country should include provision for the continuation of medical education of students in medical schools and of interns in approved institutions. The Selective Training and Service Act of 1940 does defer the conscription of students in schools but only until next July. Specific deferment is not provided for those who may be completing their medical training as interns or as residents.

"An amendment has now been proposed to the Selective Training and Service Act of 1940 by Senator Murray of Montana in the form of a bill, S. 4396, providing that 'medical and dental students at recognized medical and dental schools, and interns and resident physicians, surgeons and dentists at recognized hospitals' shall be exempt from training and service but not from registration. Any such student, intern or resident, the bill continues, who is a member of a reserve component of the land or naval forces of the United States shall not be ordered or called to active duty or into active service in any such forces without his consent, except in time of war.

"Finally it is proposed that any person selected for training and service under the act (1) who has been awarded a degree of doctor of medicine or doctor of dental surgery by a recognized medical or dental school, (2) who holds a valid license to practice medicine or dentistry and is engaged in such practice at the time of his selection, and (3) whose physical and mental fitness for such service has been satisfactorily determined shall in lieu of induction for training in service be commissioned as an officer in the Medical Department Reserve, Officers' Reserve Corps, and ordered into active military service of the United States as provided in the joint resolution approved August 27, 1940, by which the President was authorized to call into active service members of the National Guard and Reserve components of the Army. Senator Murray's bill was referred to the Senate Committee on Military Affairs. A companion bill, H. R. 10587, is pending in the House Committee on Military Affairs. Until and unless these measures become law interns, medical students and residents should provide for local selective boards information and affidavits indicating their desire for exemption because of essential work for the public health."

Arteriosclerosis Is Vast Medical Problem

Arteriosclerosis, the hardening of the arteries which threatens all persons over 50 years old, is the vastest of all medical problems of the future as well as the most neglected, Irving S. Wright, M.D., New York, declares in The Journal of the American Medical Association.

With the average length of life prolonged to over 60 years, he points out, such a disease condition becomes of increasing importance. There are definite degenerative changes present somewhere in the arterial trees of practically all individuals over the age of 50, thus making possible the onset of arteriosclerosis. "Of the population over 50 years of age," Dr. Wright says, "60 per cent (15 million) will die of some cardiovascular-renal syndrome (set of symptoms referable to the heart, blood vessels and kidneys) whereas only 9 per cent will die of cancer. A very large but as yet undetermined portion of that 60 per cent will die as a result of degenerative changes of the arteries, with the cardiac (heart), renal (kidney) or other syndromes merely the results of secondary ischemia (local and temporary deficiency of blood) or hemorrhage.

"As these syndromes frequently produce prolonged and painful disability before death, a change in philosophical approach might well be considered. Perhaps the mere prolongation of life should no longer be sought as the highest goal but rather longevity only to such a degree as it is compatible with happiness and a full life free from pain and invalidism.

The medical schools for the most part give woefully inadequate training in the study and care of arteriosclerosis. Too frequently the practicing physician fails to recognize its manifestations until gangrene has occurred. The public cares little for what it considers the vagaries of old age, although all who achieve old age are liable to them. Too few research workers have engaged in its study, to a large extent because of lack of endowment. Truly, it has been a neglected field in proportion to its importance."

Sulfanilamide For Ulcerative Endocarditis

Prolonged treatment with sulfanilamide cured a case of acute ulcerative endocarditis, a usually fatal heart disease, Samuel Alexander, M.D., and Stewart F. Alexander, M.D., Park Ridge, N. J., report in The Journal of the American Medical Association for November 16.

The disease consists of inflammation of the membrane lining the heart and results in ulceration of the valves of the heart. In this case it was due to infection with a streptococcic organism capable of destroying red blood cells.

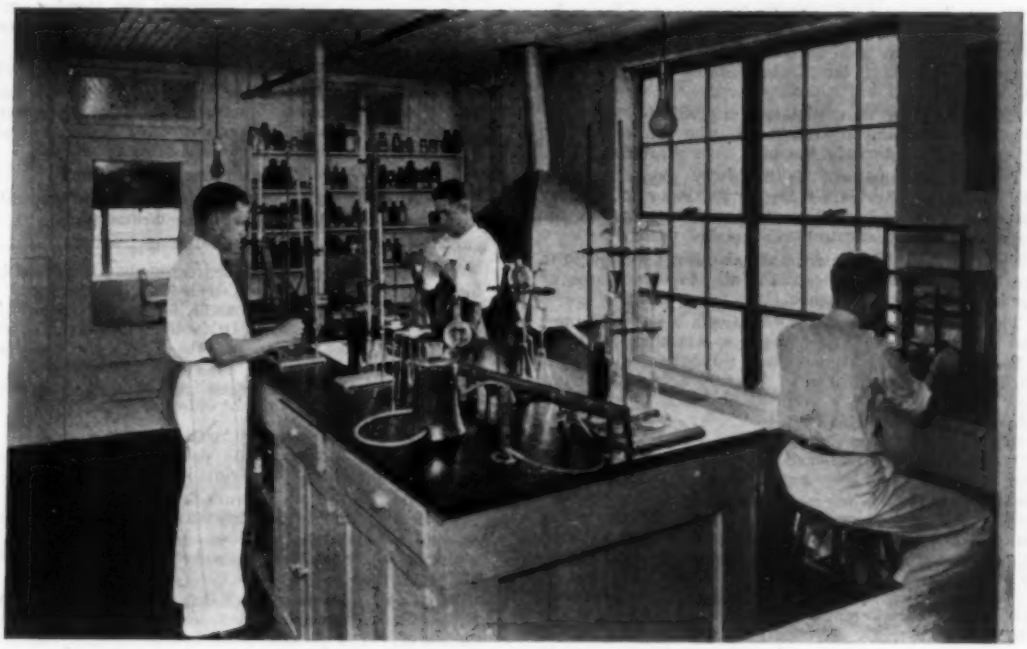
The cure is attributed by the authors to the fact that treatment was instituted early in the disease, perhaps before deep bacterial invasion had taken place, and that the drug was given for six weeks. There seems little doubt that moderate dosage, long instituted, is more effective for deep seated infections than massive doses for a shorter period of time, they say.

The School Child's Breakfast

Many a child is scolded for dullness when he should be treated for undernourishment. In hundreds of homes a "continental" breakfast of a roll and coffee is the rule. If, day after day, a child breaks the night's fast of twelve hours on this scant fare, small wonder that he is listless, nervous, or stupid at school.

A happy solution to the problem is Pablum (Mead's Cereal cooked and dried). Six times richer than fluid milk in calcium, ten times higher than spinach in iron, containing vitamins B1 and G, Pablum furnishes protective factors especially needed by the school child. The ease with which Pablum can be prepared enlists the mother's cooperation in serving a nutritious breakfast. This palatable cereal requires no further cooking and can be prepared simply by adding milk or water of any desired temperature.

Your preference appreciated on prescriptions for *Cough* and *Cold* preparations



A view of our Control Laboratory

Specify *"First Texas"*

FIRST TEXAS CHEMICAL MFG. CO.

DALLAS, TEXAS

News From The State Health Department

All registrants who are called for physical examination under the draft act will take a Wassermann test for syphilis, Dr. G. F. Mathews, Commissioner of the Oklahoma State Health Department has announced.

Details for doing the work were arranged in a conference with Dr. Louis Ritzhaupt, Guthrie, medical officer for the draft in Oklahoma.

The serologic test for syphilis is required under regulations of the Selective Service Act, and procedure for taking the test has been outlined by Dr. Thomas Parran, Surgeon General of the United States Public Health Service.

It is estimated that Wassermanns will be taken on 180,000 Oklahomans of draft age who are called for a year's active duty in the next five years.

The Wassermann will be taken by physicians who examine registrants called for duty. Prior to call for induction a second serologic test will be required for registrants whose first test was reported positive.

The State Health Department laboratory will perform the tests. Laboratory tests for all suspected cases of gonorrhea also will be made.

The health department has sent out 5,400 containers and report forms to the various examining boards. "Based on previous studies made throughout the nation, 16,000 of the 300,000 men of military age in Oklahoma will be infected with a venereal disease," Doctor Mathews said.

A second dental trailer for use in the public health dental program has been secured by the Oklahoma State Health Department.

Working in close cooperation with the dental profession, the dental division, directed by Dr. R. F. Erdman, is rapidly expanding its educational program in schools of the state.

Dental hygienists contact a school, do educational work on the importance of dental care, then examine the children's teeth. A record is made and needed corrective work is detailed and explained to the parents.

Arrangements for corrective work are made in close cooperation with the local dental societies. Parents of children are urged to take them to the family dentist regularly. For those who are unable to pay for dental treatment, arrangements are usually made with local dentists for them to do the corrective work in indigent cases. Funds for indigent treatment are provided jointly by the State Health Department and a local sponsoring agent, such as a civic club or a Parent-Teacher Association.

A "traveling laboratory," equipped to make all common tests for water and sewage treatment plants will be placed in operation soon by the Sanitary Engineering Division of the State Health Department, H. J. Darcey, director, has announced.

The laboratory will be housed in a trailer. Purpose of the "traveling lab" is to make effective stream pollution studies, and check the operation of water and sewage treatment plants.

Many municipal plants in Oklahoma are not equipped for running necessary laboratory determinations. This equipment will make it possible to do all of the needed work, and will save time.

In addition, there are many tests which, if not made quickly, are not accurate, due to changes in the composition of water and sewage.

The laboratory, manned by a chemist, will be sent to state cities when requested by city officials, and will be sent where a need arises.

The trailer will have a 20-degree incubator, for making biochemical oxygen demand tests; will be equipped to make all solid determinations in water and sewage, including total, suspended, settleable and volatile solids; equipped to make all necessary bacteriological analyses; and will be equipped to determine the efficiency of chemical treatment in water and sewage treatment plants.

Public health departments devote much of their attention to the child, the earlier in life the better.

The doctor follows a working schedule whereby he examines a majority of the school children of his county, and examinations are done on infants and pre-school children at numerous clinics held in districts of the county.

In his examination the doctor looks for defects and urges parents to seek medical advice where treatment is indicated. The private physician is the one who must do the treating and the corrective work.

Tonsillectomies are recommended, eyes and teeth are examined and when a need of treatment is seen, the local, private practitioner is pointed to as the man to see.

To make the entire population health-conscious, particularly to care for the health of youngsters, is one of the major objectives of the health department.

Details for a cancer control program, to be sponsored jointly by the Oklahoma State Medical Association and the Oklahoma State Health Department, will be determined in a meeting to be held soon, Dr. G. F. Mathews, commissioner has announced.

A conference will be held with members of the Medical Association Committee for Study and Control of Cancer, consisting of Dr. Gregory E. Stanbro, chairman, Oklahoma City, Dr. Ralph A. McGill, Tulsa, and Dr. Paul B. Champlin, Enid.

A cancer control program was sponsored in 1939-1940 by these two groups and the effort was considered an outstanding success. Dr. J. Samuel Binkley of New York City delivered lectures on cancer to both lay groups and the medical profession in 40 Oklahoma cities during a two months' period.

The question of what type of program to hold this year, whether a lecture series or in some other form, will be decided at the conference, date for which is to be set soon, Doctor Mathews said.

Group Hospital Service News

QUESTIONS AND ANSWERS REGARDING G. H. S.

1. Question: Who may join?
   Answer: A minimum number of 10 employees of one organization. If the total number of employees is over 30, approximately 1/3 must join to place the plan in effect.
2. Question: What is the age limit for members?
   Answer: Under age 65 years at the time of joining. However, the member may continue his membership at the same rate after attaining this age.
3. Question: When does the service go into effect?
   Answer: The service becomes effective immediately upon acceptance of the group, with the exception of maternity care which is covered after 10 months.
4. Question: Who guarantees the service?
   Answer: The participating hospitals guarantee the service to the members.

5. Question: What are the benefits received?

Answer: (1) 30 days IN-PATIENT care each contract year (dependents 21 days). (2) Two-bed room (not a ward). (3) Meals and special diets. (4) General nursing care. (5) Operating room as often as needed. (6) Ordinary surgical dressings. (7) Ordinary drugs and medicines. (8) Ordinary laboratory service. (9) An allowance of $4.50 a day toward the cost of any available private room; and all additional services as provided in the Membership Agreement are furnished to members choosing private instead of semi-private accommodations. (10) Ambulance service in emergencies resulting from accidents, or upon recommendation of a physician, for removal from hospital of first admission to a hospital of patient's choice, not to exceed a distance of 50 miles in either instance. (11) Maternity care for a period of 12 days after 10 months' membership, including delivery room and nursery care.

6. Question: When a person uses a non-member hospital does the plan pay for this?

Answer: Yes. Group Hospital Service will reimburse the member or dependent up to $4.50 per day in any general hospital anywhere in the world.

7. Question: What illnesses are excluded?

Answer: Only those which are generally not acceptable to the hospital.

8. Question: Does the plan pay doctor's fees?

Answer: No. This is a hospital service plan to include the expenses of hospital care.

9. Question: What does the service cost monthly?

Answer: Employed members: $1.00 enrollment fee, 75c monthly.
Dependents: 60c monthly for one dependent, 15c monthly for all additional dependents (not each). Maximum family price $1.50 monthly regardless of number. NO ENROLLMENT FEE FOR DEPENDENTS. (Eligible dependents at above rates include spouse; also all unmarried children under the age of 21 years. Mothers, Fathers, Sisters and Brothers are not eligible as dependents).

10. Question: May an employed woman include her employed husband or vice-versa?

Answer: Yes, the employed husband or wife may be included as a dependent member.

11. Question: When the employed person has a dependent mother or sister, can they be included as dependents?

Answer: No. Only the immediate family of husband, wife, and children under the age of 21 years are extended the privilege of joining at the present time.

12. Question: When a member leaves his place of employment, is the service discontinued?

Answer: No. He may continue his membership at the same monthly rate. However, we do request that he change his method of payment from monthly to semi-annually or annually to facilitate bookkeeping expense, etc.

13. Question: If a member of the family is in the hospital at the time of enrolling, will his bill be paid by Group Hospital Service?

Answer: No. The application for membership is reduced to a minimum amount of information, but it includes the statement that all persons are in good health and have not been advised or have knowledge of any present physical condition requiring hospital care.

14. Question: Is a medical examination required?

Answer: No. None required at any time.

15. Question: Do members have free choice of hospital and physician?

Answer: Yes. The member and his doctor determine the hospital just as he does today.

16. Question: Upon entering the hospital, should a member inform them of his membership?

Answer: Yes. A member should present his membership card so that the bill will be sent to Group Hospital Service.

17. Question: Should a member then file a claim with Group Hospital Service?

Answer: No. Nothing more is required and red tape is completely eliminated.

18. Question: Who determines when members should leave the hospital?

Answer: Their attending physician.

19. Question: Must a member sign a contract for a year or longer?

Answer: No. They may withdraw at any time.

20. Question: Is the contract cancellable by Group Hospital Service?

Answer: No. Group Hospital Service cannot cancell except for non-payment of dues, fraud or to comply with any Federal or State Laws which might be passed.

21. Question: Who are the stockholders or investors in Group Hospital Service?

Answer: There are none.

22. Question: Do all Officers and Trustees receive a salary?

Answer: None of them do. They all serve without pay, giving their services to the people of the community. Employees, both field and office are paid a salary and no commissions or bonuses are paid to anyone.

23. Question: What happens to unrequired surpluses?

Answer: They are used to extend and buy more benefits for members.

24. Question: Who started Group Hospital Service in Oklahoma?

Answer: The Oklahoma State Medical Association and the Oklahoma State Hospital Association. It also has the approval of the American Hospital Association.

25. Question: Who supervises and regulates Group Hospital Service?

Answer: The Officers and Trustees and the Oklahoma State Insurance Department.

26. Question: How many approved non-profit hospitalization plans in the United States and what is the total membership?

Answer: There are 60 approved plans with a membership of about 6,000,000 persons.

27. Question: Is this movement in sympathy with or related to socialized or state medicine?

Answer: No. On the contrary, its tendencies and objectives are to preserve the voluntary American way of independence.

• OBITUARIES •

Dr. LeRoy Long
1869-1940

In the death of Dr. LeRoy Long the medical profession suffered a great loss. For a period of forty-five years Dr. Long served his profession with unquestionable skill, always conditioned by unfailing loyalty and wisdom. His character was above reproach and his influence for good in his community was recognized by all who knew him. His striking appearance, his dignified demeanor, his ready speech, his sense of propriety, and his professional attainments gave him a high rating at home and abroad.

Dr. Long was born in Mecklenburg County, North Carolina, January 1, 1869. He died of coronary disease in Oklahoma City, October 27, 1940. He graduated from the Louisville Medical School in 1893 with the highest honors of his class. He was appointed instructor in anatomy and urological surgery and served in this capacity until 1895, when he located in Atoka. Here he was associated with Dr. Fulton for a period of one year. He married Martha Downing of Atoka in 1896. As a result of this union two sons were born: LeRoy Downing and Wendell McLean. Perhaps inspired by the career of a worthy father, the two sons studied medicine and are now carrying on the work so well begun.

In 1896 he moved to Caddo where he practiced medicine until 1903. He was the first President of the Medical Board of the Choctaw Nation, later serving as Chairman of the Medical Board for Indian Territory, and also as Secretary of the Indian Territory Medical Society. From 1903 to 1915 he lived in McAlester, devoting most of his time to surgery. In 1915 he came to Oklahoma City to accept the Deanship of the University of Oklahoma School of Medicine. In this capacity he served with distinction until 1931. During this time he was Professor of Surgery.

He was a member of the State Board of Medical Examiners from 1911 to 1915. He was a member of the Founders Group, of the American Board of Surgery, and charter member and Governor of the American College of Surgeons from the time of its organization. He was a Fellow in the International College of Surgeons. He was Past-President of the State Medical Association, the Oklahoma Academy of Science, and the Oklahoma City Academy of Medicine, and a Fellow of the Western Surgical Association. Dr. Long was Major in the Medical Reserve Corps, 1917, being placed on reserve list in 1918 as Lieutenant Colonel; in 1923, Commander General Hospital, No. 56.

In the death of Dr. Long the medical profession has lost a great champion of industry, courtesy, honor and integrity. Fortunately these sterling attributes of character have a spiritual value which should become an abiding influence in the lives of those who are left behind.

Fresh and Stored Blood Transfusions

"The incidence of all types of reactions was no greater from the transfusion of preserved blood than when fresh blood was employed, provided proper care was taken in storing and handling it," Elmer L. DeGowin, M.D., and Robert C. Hardin, M.D., Iowa City, report in The Journal of the American Medical Association. Their findings are based on a study of the results of 295 fresh blood and 2,128 stored blood transfusions.

Dr. Walter L. Rose
1876-1940

Death closed the pages on a long medical career when it came to Dr. Walter L. Rose, 64-year old pioneer Woodward physician. November 13, 1940, in the Hertzler Clinic at Halstead, Kan. His death was caused by a heart ailment.

Dr. Rose was born in Reno County, Kan., on February 18, 1876. In 1903, he was graduated from Central Medical College, St. Joseph, Mo., and in 1909 from Ensworth Medical College in the same city, his specialty being proctology and gynecology. In 1903 he received a license to practice in Oklahoma Territory, and in 1909 he was licensed to practice in the state of Oklahoma. Before going to Woodward to establish his practice, he had practiced in Hutchinson and Harper, Kan.

Dr. Rose held positions of examiner for the Kansas City Life and the New York Life Insurance companies, the Business Men's Assurance company, the Aetna Insurance company and the M K & T. Railroad Company. He was a member of the Knights of Pythias lodge, A. F. & A. M. lodge, and the York Rie Masonic bodies. He was a member of the Presbyterian church.

Surviving are his wife; a sister, Mrs. A. Roberts of Twin Falls, Idaho; and a brother, Frank L. Rose of Fairland, Indiana.

Funeral services were conducted at Lyons Kan., with the Rev. R. A. McCulloh, pastor of the Woodward Presbyterian Church, officiating.

Dr. Zachary Joseph Clark
1868-1940

The medical profession of Oklahoma lost one of its best-known and loved members Thursday, November 14, with the death of Dr. Zachary Joseph Clark, pioneer physician of Cherokee, Alfalfa County. He was 73 years of age at the time of his death. His death followed an extended illness, critical for the past several weeks.

Dr. Clark was born in Metamora, Ill., on November 12, 1868, and came to Kansas at an early age with his parents, who settled on a homestead near Cunningham, in Kingman county. Later, his father, John Clark, was a practicing attorney in Wichita for several years.

Dr. Clark was a graduate of the Kansas City Medical College, receiving his medical degree in 1900. He came that year in Ingersoll, where he made his home until 1908. In that year he moved to Cherokee where he practiced medicine until the time of his death.

The physician was outstanding in state medical circles, serving almost every year as delegate to the Association's annual meetings.

Surviving are his wife; two daughters, Hallie Clark Forde and Mary Barbara Clark Cole; and two sons, Everett E. and Robert Donovan.

Funeral services were conducted from the Christian Church in Cherokee on Sunday afternoon, November 17, with the Rev. W. A. Keller officiating. Interment was in the M. W. A. cemetery at Cherokee.

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STUDIES IN THE AVITAMINOSES

This page is the final of a series on vitamin deficiencies presented by the research division of The Upjohn Company because of the profession's widespread interest in the subject. A full color, two-page insert on the same subject appears in the December 7 issue of The Journal of the American Medical Association.

The Exacerbation of LATENT PELLAGRA by Acute Infections

Vitamin requirements are increased by many factors, especially by acute infectious disease. Field, commenting on this phenomenon, states that the onset of pellagra may coincide with pregnancy, organic gastrointestinal disease, severe and prolonged illnesses, and dietary restriction for therapeutic purposes. The patient whose tongue is shown developed this manifestation of pellagra during the course of lobar pneumonia. After nicotinic acid therapy was started she coughed up a cast of the esophagus which consisted of a grey membrane similar to that covering the tongue. The pellagrous symptoms responded promptly to treatment.

Illustration courtesy of Virgil P. W. Sydenstricker, M.D., University of Georgia Medical School, Augusta, Ga.

Illustration courtesy of Virgil P. W. Sydenstricker, M.D., University of Georgia Medical School, Augusta, Ga.

The Coexistence of Vitamin Deficiency States

Many authors have recently presented evidence that vitamin deficiency states often are multiple. Strauss has called attention to the fact that deficiency disease in man, unlike that experimentally produced in animals, is rarely limited to a single factor. The patient whose hands are shown had partaken of a markedly deficient diet for several months. As a result, scurvy and pellagra developed concurrently. The ecchymoses of the former and the dermatitis of the latter are clearly visible. Specific therapy together with dietary adjustment led to prompt remission of these signs.

UPJOHN

University of Oklahoma School of Medicine

A Summary of the Report on Activities at the University Hospitals For the Past Summer

This past summer and early fall have been unusually busy at the University Hospitals. A compartive study of all the hospital records shows an increased activity in the number of admissions to the hospitals, the number of outpatient visits and treatments, and amount of surgery performed, over that of the corresponding months of 1939:

Statistics For the Months of June, July, August, and September

	1939	1940	Increase
Admissions:	2,083	2,299	216
Outpatient Treatments:	11,509	13,586	2,077
Surgical Operations:	1,814	1,823	9

In addition to these general increases in patient care, there were generalized increases in the activity of the laboratories including the Clinical Pathological Laboratories, X-Ray Department, and Genito Urinary Department. The percentage of autopsies obtained has likewise increased and has been consistantly high above 50 per cent, which may be regarded as a very good record. The autopsy per cent for August was 59.3. The mortality rate has remained very good and for September was 1.5 per cent. This is a very low percentage considering the fact that many of the cases received at these institutions are in extremis upon admission. The increase in admissions has been made possible despite the reduction of State appropriations for the maintenance of the institutions, because of a more rapid turnover of patients due to the generalized increased activity of the Visiting and Resident Staffs. In this way, the patients' stay has been reduced.

During the past summer a number of interesting cases presented themselves. Among these were:

The Medical Service received a fatal case of barbiturate poisoning. An autopsy was performed and our Department of Pharmacology found 23 milligrams of barbital in the kidneys. They also had a case of carcinoma of the lung which had developed a very severe bromide psychosis that subsided within three weeks.

The Obstetrical Department encountered a pregnancy with severe anemia due to Hookworm Disease. An unusual blood dyscrasia presented itself in a polycythemia vera with a leukemoid white count of myeloid type.

The Department of Orthopaedic Surgery encountered two cases of congenital shortening of the Femur.

The Eye, Ear, Nose and Throat Department had a case of screw worm infestation of the nose and sinuses complicated by atrophic rhinitis. They had an abscess of the epiglottis with laryngeal obstruction. They also had a serious case of frontal sinusitis causing an iridocyclitis, perforation of the cornea and a prolapse of the iris.

The Surgical Service encountered two interesting and perhaps identical cases where two boys aspirated large solitary segments of fox-tail weeds. These lodged in the right lower lobes and caused localized abscesses. Right lower lobectomies were performed with an apparent cure.

In addition to the activity in regard to the patient service, the summer was also a busy one from the standpoint of maintenance and equipment and many improvements were made. Considerable painting and remodeling was done in both institutions during the summer. We have been able to make a slight improvement in our segregation of cases in regard to diseases and improved isolation facilities for contagious cases by remodeling certain single rooms for isolation rooms and by the installation of steel and glass cubicle partitions. Formerly we were unable to admit any contagious cases whatever, due to the lack of isolation facilities. Contagious cases are necessary in these institutions from a teaching standpoint, however, due to certain changes, we now have six single rooms available which are called isolation rooms, so now we can admit a few contagious cases into these institutions for treatment and for teaching purposes. However, our isolation facilities are very much hampered and there is a definite growing need for a small isolation pavilion to care for the great number of indigent contagious cases in the State of Oklahoma. A Central Patients' Clothes Room was installed in both institutions thus removing all of the patients' clothing from the Linen Rooms on the wards, to this Central Patients' Clothes Room, thus affording better vermin control and giving additional space to ward utility rooms. The hospitals obtained, this summer, a General-Collins Emergency Lung of the latest type and is one of the few institutions in the west to have such a piece of equipment at this early date. This portable respirator works on the same general principles as the "Iron Lung," but is more advantageous because of its size and portability. It is extremely useful in emergency cases of asphyxia, except those having some laryngeal obstruction. A modern Central Supply Room was installed and is now under the direct supervision of graduate nurses. All of the autoclaves that were scattered throughout the hospital are now arranged in the Central Supply Room in a concealed battery. All of

Dr. L. E. Emanuel Named New Hospital Association Head

Beginning his term as new president of the Oklahoma State Hospital Association is Dr. L. E. Emanuel of Chickasha, elected to that position at the association's convention which ended November 16 after a two-day session in Oklahoma City.

Dr. Emanuel succeeds Dr. E. T. Olsen, former medical director at University Hospital in Oklahoma City, who had served as president for two years.

Other officers elected in the hospital association's closing sessions are: E. U. Benson, Cushing, vice-president; and J. O. Bush, Jr., secretary-treasurer. Doctor Emanuel was named delegate to the House of Delegates of the American Hospital Association. Approximately 100 delegates attended the two-day convention.

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the sterilization of surgical dressings and instruments are now done in this room and then delivered to the units of the hospital. As an adjunct to the Central Supply Room we are now installing a "closed system" for the manufacture of intravenous fluids, replacing the "open method." This "closed system" will eliminate practically all possible contamination by pyrogens. The hospitals have been manufacturing their own intravenous saline solutions for some time at a great economy to these institutions and affording a greater variety of strength solutions. We have had a large Blood Bank for some time, which not only reduced the cost of transfusions but now permits us to give four and five times the amount of blood which was formerly given and at a lower cost. In the Blood Bank, both whole blood and plasma serum have been used. The facilities for the care of indigent negroes have been greatly improved by the setting-up of a 20-bed colored children's ward. There has been and is a general lack of facilities for the hospital care of negroes in the State of Oklahoma according to their population. In view of this fact, the University Hospitals instituted this 20-bed ward, modern in every respect, and at the same time, increased the capacity for the adult indigent negroes.

The School of Nursing and Department of Nursing Service have been improved. In the School of Nursing, a Curriculum Committee was formed which made certain changes in the curriculum, so that now the curriculum conforms, not only to the State Board requirements, but also conforms to the National League of Nursing standards. In addition to improving the standards of our nurses' curriculum, we have also improved the teaching facilities afforded by making a number of teaching additions to our Nursing Staff. The nursing service has been improved by the addition of several graduate nurses in certain specialized fields. Likewise, the hours of the nursing service rendered to patients have been increased. Through the cooperation of the State Board of Health and the Children's Bureau of Washington, D. C., the University Hospitals offered this summer, two Postgraduate Obstetrical Courses to licensed M.D.'s. And as both of these courses were very successful, it is intended to repeat these at certain times of the year. The University Hospitals have also established Pre-Natal Clinics which are held daily. A registered graduate nurse, working under the Department of Obstetrics, holds pre-natal classes daily in connection with the Department of Obstetrics and we are assured that these pre-natal instructions will, in the end, improve our maternal and child mortality. The Dietetic Department has been improved by the addition of new equipment and the addition of several more trained dietitians. The Visiting Staff of the Hospital has been very active. The regular departmental meetings have been held and very shortly the transactions and minutes of these meeting will be published monthly. A number of our Visiting Staff men have been called out of town to read papers at various meetings and conventions.

Sulfanilamide for Cerebrospinal Meningitis

Sulfanilamide is a simple and highly effective treatment for cerebrospinal meningitis (inflammation of the membranes enveloping the spinal cord and brain), Kalei K. Gregory, M.D., Edward J. West, M.D., and Raymond E. Stevens, M.D., Providence R. I., state in The Journal of the American Medical Association for September 28. They report a death rate of only 17.2 per cent in patients so treated as compared with 45.1 per cent in patients given antimeningococcus serum and 42.4 per cent in patients treated with meningococcus antitoxin.

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Plague Important Public Health Problem

Plague must continue to rank high as a public health problem, a recent issue of The Journal of the American Medical Association declares.

"The first recorded appearance of plague in the United States occurred in San Francisco on March 6, 1900," The Journal says. "In reviewing developments in this country since that time, Brock C. Hampton points out that human cases of the disease have been reported in eight states in the following chronologic order: California 1900, Washington 1907, Louisiana 1914, Florida 1920, Texas 1920, Oregon 1934, Utah 1936 and Nevada 1937 (the last human case was reported from Millard County, Utah, on December 4, 1939). In all, 499 human cases with 314 deaths were recorded between 1900 and January 1, 1940. Between 1934 and 1939, however, only fifteen cases of plague with six deaths have been reported in the United States, and all of these but four cases and one death occurred in California. This record exists in spite of the fact that plague infection has been demonstrated in fourteen species of ground squirrels and in red squirrels, tree squirrels, flying squirrels, wood rats, kangaroo rats, field mice, prairie dogs, chipmunks, marmots and one cotton tail rabbit, in addition to the more common infection in rats.

"The reason this widespread distribution in wild life has not resulted in more human cases may be in part explained by the sparse human settlements in those regions of extensive wild life infection. However, as records already available show, wild rodent plagues may spread unnoticed over wide areas unless intensive measures are taken to detect their presence. Further spread of the infection eastward through a rodent and human population of insufficient density to give rise to explosive epidemics may, however, eventually bring the disease within striking distance of the rat and human populations of large cities. Here the disease may become epidemic in the presence of a sufficiently high population of rats and a sufficiently high flea index to provide favorable conditions for human infection. Furthermore, as rightly emphasized, the relatively small number of cases of plague during the past forty years does not indicate that too much prominence has been accorded that disease, since its ability to surmount the barrier of quarantine, its persistence and gradual biologic and geographic spread and the difficulty of eradicating it must continue to place it high in the rank of public health problems.

"The extensive available knowledge of plague prevention and control and the exercise of constant vigilance should guarantee, however, that it need not be permitted to occur in epidemic form in any locality in the United States."

NORTHWESTERN U.'S NEW ABBOTT HALL HOUSES EIGHTY MEDICAL STUDENTS

Eighty fledgling doctors are among the students who are "living high" at Northwestern University this year in the new 20-story Abbott Hall, believed to be the tallest building in the world used exclusively as a university dormitory. Housing 850 students on the university's Chicago campus, where the medical and dental schools and the school of law are located, the new building is 210 feet tall and cost more than $1,750,000.

It is a city in itself, with shops, libraries, dining rooms, lounges, exercise facilities including bowling alleys and squash courts, and a recreational roof garden at the tenth floor level. Across Lake Shore drive is a new sand beach on Lake Michigan.

The building was named for Wallace C. Abbott, founder of Abbott Laboratories, and his wife, Clara A. Abbott, from whose estate Northwestern University received last December a gift of $1,500,000 for use in medical, chemical, and surgical research.

Students in the medical school will live on the sixth, seventh, eighth, and ninth floors of Abbott Hall. Each residential floor accommodates 56 students and has two shower rooms, two lavatories, and a large lounge facing toward the lake.

The skyscraper dormitory is the eighth structure on Northwestern University's Chicago campus, where the professional schools and the evening departments are located.

Auxiliary News

"Nothing—and I say this without the slightest mental reservation—*nothing* is as important in shaping the doctor's career as is his wife and his home. The doctor's wife must share his idealism, appreciate a standard of values held by no other group, and give to him an understanding required of few. Being a doctor's wife is both an art and a career."—Dr. Rock Sleyster, former President of the American Medical Association, and "for 36 years the husband of a doctor's wife."

Mrs. V. E. Holcombe of Charleston, West Virginia, President of the Woman's Auxiliary to the American Medical Association, probably will be in Oklahoma sometime in January. We hope to have a meeting so that everyone will have the opportunity of meeting her. Please watch this column and your newspapers for announcement of the date and place.

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The State of Oklahoma has nine organized auxiliaries. They are: Cleveland, Garfield, LeFlore, Oklahoma, Pittsburg, Pontotoc, Pottawatomie, Tulsa, and Woodward counties. There also are some members-at-large who, having no county organizations, belong to the State Auxiliary. We would like to double or triple that number. If any other group of physicians' wives is interested in forming an organization, Mrs. W. A. Fowler, Norman, State President, will be glad to assist them in every way.

The officers of the Women's Auxiliary to the Oklahoma State Medical Association for 1940-41 are: President, Mrs. W. A. Fowler, Norman; President-Elect, Mrs. Edward D. Greenberger, McAlester; Vice-President, Mrs. A. R. Sugg, Ada; Secretary, Mrs. Jim Haddock, Norman; Treasurer, Mrs. O. E. Howell, Norman; Historian, Mrs. E. P. Allen, Oklahoma City; Parliamentarian, Mrs. Charles Paramore, Shawnee.

In the Woman's Auxiliary to the American Medical Association, which includes all members of all county and state auxiliaries, there are 24,000 members. Feeling the need of having a *well-informed* organization, the Board of Directors incorporated in the policies a circulation department of the official publication—THE BULLETIN. Through this medium, every member of the organization can have in her own hands the latest news, information, and the program of the Auxiliary in its entirety. To accept the theme and objectives of the Women's Auxiliary and not support them is dangerous in the face of today's evolution of the nation's social and economic structure. In maintaining the democracy of medicine, the individual physician's wife is a central pivot for expansion. THE BULLETIN will give you a clear picture of what is going on, what is likely to happen, what can be done about it, and what the Auxiliary can do about it. This information will come from the leading authorities of the medical profession. The subscription price of THE BULLETIN is one dollar. There are four issues annually. Send your money with your name and address to Mrs. H. E. Christenberry, Circulation Manager, Highland Drive, Knoxville, Tennessee.

LeFlore County

Mrs. Rush Wright of Poteau, President of the LeFlore County Auxiliary, reports an interesting November meeting in the home of Mrs. F. P. Baker, Talihina. Guest speakers were Dr. F. P. Baker, Superintendent of the State Sanatarium, who talked on "Tuberculosis" and Dr. Noel Kaho, who gave a patient's view of the hospital and also reviewed one of his own stories written for children. There are ten enthusiastic members of this group, who have taken up Red Cross work as their special project.

Oklahoma County

There are 152 members of the Oklahoma County Auxiliary, of which Mrs. F. Maxey Cooper, 248 N. W. 34th St., Oklahoma City, is President. They have had three meetings so far, the registration coffee, the October meeting, and the November meeting. In October, guest speakers were Dr. Tom Lowry, President of the Oklahoma County Medical Association, and Dr. E. Stanley Jones, Christian missionary. In November they had reports of the meeting of the Southern Medical Association at Louisville, a large number of members of the Auxiliary having attended. This group is making layettes for underprivileged children in the Crippled Children's Hospital as their special project. The Oklahoma County Auxiliary entertained for the wives of physicians who attended the Oklahoma City Clinical Society Conference in November.

Pittsburg County

Mrs. Edward D. Greenberger of McAlester, President of the Pittsburg County Auxiliary, held the November meeting in her home. There are 15 members, whose special projects are providing cod liver oil for needy children, sending flowers to out-of-town hospitalized patients, and sewing for the Red Cross. The guest speaker at the meeting was Mrs. Walter J. Dell, who talked on "Human Milk Stations" and Hygeia articles.

Pontotoc County

The first meeting of the Pontotoc County Auxiliary was held in the home of the President, Mrs. E. M. Gullatt, in Ada. Thirteen of their sixteen members were present. They have chosen work at the hospital for their special project.

Tulsa County

Mrs. J. W. Rogers of Tulsa is President of the Tulsa County Auxiliary of 136 active and 11 honorary members. Their first meeting was held in the home of Mrs. Harry B. Stewart, 2500 E. 27th Place, Tulsa, where they had a moving talking picture show on "Tuberculosis." In December they plan to have a toy shower, the toys to be given to underprivileged children in Tulsa hospitals. They are planning to use posters to acquaint the public with the "Doctors at Work" radio program.

Classified Advertisements

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A special course in gynecological surgery may be arranged beginning January 6, 1941.

A special, intensive course in otolaryngology will be offered beginning mid March, 1941, and continue for six weeks.

For detailed information write Director

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